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AFTER THE FIFTY-MINUTE DELUGE OF BOMBS ON DUSSELDORF ON THE NIGHT OF JULY 31: WHEN THIS PICTURE WAS TAKEN BY R.A.F. RECONNAISSANCE AIRCRAFT TWELVE HOURS LATER IN DAYLIGHT, THE CITY WAS STILL BURNING

A great number of Lancasters, as well as a great force of all the other types of heavy and medium bombers, attacked Dusseldorf. It was probably the most concentrated attack that Bomber Command has yet made. Over 150 4,000-lb. bombs, a great weight of other high-explosive bombs of all sizes, and hundreds of thousands of incendiaries were dropped on Dusseldorf in no more than fifty minutes. Very good weather, bright moonlight, and easy recognition of the target, made possible such a rapid attack and the consequent saturation of the defences. Fires sprang up as quickly as the bombs were dropped, and above them were columns of smoke up to 4,000 ft. Dusseldorf is one of the largest centres of heavy industry, especially steel and engineering, in Germany. Among its products are component parts for motor vehicles, aircraft and warships, torpedoes, mines, heavy guns, shells, bombs, grenades, armour plates, and explosives. The centre of the town is a very congested area. Its industries lie both in and around the town, and some especially important plants are in the suburbs. The town of Dusseldorf itself has about 350,000 inhabitants and another 150,000 on its outskirts. Reconnaissance confirmed that twelve hours later many fires were still burning. This picture shows the havoc in the Handelshafen district, with the Custom House burning (in the bottom left corner); warehouses burnt out and still smouldering (in the bottom foreground); and completely gutted buildings, still smouldering (in the centre). A great deal of the damage was in predominantly industrial areas, and the proportion of factories hit by high explosives, or burnt out by incendiaries, is high

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A WAR NEWSLETTER—No. 153

1, NEW OXFORD STREET, W.C.1.

Threats and Boasts.—I said my say the other day about the policy of threats and boasts. Propaganda is a subject I don't understand—nor like. If boast and threaten we must, I would rather it were done by the Service Chief than by the Minister of the Department concerned. Albeit, threat and boast are foreign to the nature and inclination of most serving officers, and there is, on the face of it, very little real difference between the threats and boasts of a Service Chief in war and those of a Dago prize-fighter on the eve of his £10,000 glove fight. ("I'll send him to sleep in two rounds with my left punch.") In old days, we used to deplore the crude boasts of those Dago prize-fighters. It is all very puzzling. I keep an open mind and try to see both sides. The clue to the puzzle is, of course, *propaganda*. I am sure that Air Chief Harris is not a boaster by choice. I am sure he knows that his bombs speak louder than his bombast—much louder. It is abundantly clear that the Government has information (denied to us) of the effect of our bombing on German morale, which it considers reliable and important. It has given out orders that this lowering of morale must be exploited in the interests of the Allies, not least of Russia; and Sir Arthur Harris has obeyed the order. There can be no other explanation. For no Service Chief would, after recent bitter experience, boast and threaten from inclination. Thus, the explanation, if sound, has its encouraging features. But what is most curious about this policy is the clear indication that our Government believes that the German people have none of the grit of the British race or of many of its allies. Hitler, when he had air superiority and met far less opposition in the sky of Britain, when he was bombing our cities to hell, than to-day we meet over Germany, used exactly the same boasts and threats as Harris used last week. But his boasts and threats had *precisely the opposite* effect of that which he hoped to achieve. They positively welded and tempered the steel of our resistance. It must be the very article of our Government's belief that this result will not come of *our* boasts and threats; in short, that the German race will react in the way in which Hitler so confidently expected the British would react—*i.e.*, dethrone Churchill and raise the white flag. If the propaganda of boast and threat can achieve the expulsion of Hitler and his gang by the German people, who so foolish and futile as to look down his nose at even the crudest propaganda or deny its uses? That is why every man who is puzzled by propaganda and dislikes wordy boasts must keep an open mind. He cannot, of course, stifle his doubts (if he has them) as to the soundness of the major and vital premise—that the Germans have none of our British grit and obstinacy in the face of threats.

War Yesterdays.—The vigorous prosecutor of the war probably regards it as waste of time, if not a danger, to turn back the pages and disturb the filed records of three years of war. I find myself constantly doing so. It is an exercise sometimes heart-breaking, often disillusioning, always instructive. I do not say that "*all* our yesterdays have lighted fools the way to dusty death," but I do say that many of them teach us stark lessons applicable to present and future conduct. Correspondence of a year ago reveals to us a mentality which to-day we do not possess and can hardly conceive we ever practised. A year ago we may find we were preoccupied with a dozen matters of personal advancement or profit which to-day mean little or nothing to us. A year ago we expressed beliefs and subscribed to views which to-day we regard as moonshine. A year ago, Ministers, strategists, economists and other experts made boasts and promises or offered statistical proofs and prophecies about the strategic situation or the economic condition of our enemies which to-day read like the vapourings of infants. And all we read of yesterday convinces us that human reasoning is ridiculously frail, that man is a short-sighted animal (be he a big man or a little man), and that the only wise man (be he eminent or common) is he who writes little, says less, and keeps his current opinions to himself. High or humble, public or private, men and women should all find time to turn back the pages of the war years and learn the lessons they teach so baldly.

No Escape.—"No retreat, no retreat. They must conquer or die Who have no retreat." (Or words to that effect. I have to be so very careful nowadays to verify the sources of my quotations, since the whole of the "reserves" of Cheltenham, Bournemouth, Brompton Square and the Service Clubs were mobilised to catch me out in an inaccuracy.) Well, I stand or fall by the quotation which I cite apropos this question of *summer holidays*. I read and ponder the letters of overworked housewives who ask how the Government can be so heartless and unimaginative as to discourage the taking of one vital week's holiday away from home and from the innumerable, unfinishable, intolerable tasks of cook-housekeeper-housemaid - gardener - henwife - goat - keeper-rabbit warden-children's nurse. My first reaction is rage and detestation of this inhuman brutality of Authority. My second thought lights on this quotation cited. Give that harassed (how do you spell it?) housewife a free ticket (first class) to anywhere, a Rolls-Royce and 300 units of petrol, a rent-free house, a sandy cove innocent of war . . . and how can she use them? Who during her absence will be found to feed and milk the goats, comb the rabbits, find food for the hens, pot the eggs, jam the plums, protect or gather the apples, tend the cabbages, water the tomatoes and air the house? It is a hollow grouse. That holiday is nothing but an impossible dream.

THE B.B.C. FORMS ITS OWN AUXILIARY WOMEN'S CORPS. Members of the Corps being drilled by their Home Guard Instructor: The Home Guard at Broadcasting House in London now have their own Auxiliary Women's Corps. A hundred girls, employed as secretaries, executives, canteen-workers, etc., have been recruited since the formation of the Corps a month ago; Home Guard officers and instructors have been training them for their non-combatant duties. Girls who work hard during the day in offices and kitchens at B.B.C. Headquarters are now giving up their evenings to lectures and parades. First-aid, signalling and administration are amongst the courses undertaken by the Corps

"Concessions" to Merchant Seamen.—I like to give space in this "Newsletter" to any facts which may be helpful to Merchant Seamen or their families. Information of the kind often takes a long time to percolate to men so often on the high seas for long periods. The Ministry of War Transport recently made some humane concessions to help to allay the anxiety of relatives of our seamen. Often the enemy, as a device to extract information, name some merchant ship as having been sunk. If the Government publishes an immediate denial of the lie, the enemy obtains a useful fact. But the lie uncontradicted gives anxiety to the families of those serving aboard the named ship. Partly to alleviate this anxiety, and partly to compensate for the inevitable delays in Merchant Marine mails, the Ministry and G.P.O. have introduced a scheme of "concession" telegrams which relatives may send to men serving on board ships or in hospitals abroad. The regulations and details of this service will soon be available in a leaflet to be obtained from Mercantile Marine offices. Masters can henceforth enquire at the offices of the N.C.S.O. or the Consul at ports of call overseas, since these telegrams and the existing "omnibus" telegrams cannot be delivered direct to the ship concerned.

The Boys Come Home.—When these lines see print, the summer holidays for the schools will have begun. The pleasure on both sides implicit in this event is not lessened by the ever-increasing difficulties of transport and distraction for the returned heirs of the future. How to meet your little Tommy, and how to keep him sufficiently amused to prevent the possibility of his "pining for September 23"? These are new problems, strange problems; and they will grow more difficult of solution with every war term henceforth. The school box means private transport. Is it legitimate transport, even if it can be arranged? Parents and sisters, who have not slept away from home for two years, may well feel that the old and too familiar home may be "paradise enow" for the returned hero of the upper fourth. But will that hero agree? No visit to the sea, not even for a day; no cricket matches; no customary visit to Scotland, or even Bognor; no picnics beyond bicycle range, no shooting, no motor-bicycling. There is some comforting evidence that these wartime limitations have impressed themselves on the young mind. One middle-aged father has had his orders—stump cricket. May chronic lumbago and irreplaceable window glass come safely through the ordeal!

Home Guard—Commandos.—I take off my hat (and mop my brow) once more to the French-speaking Canadian unit which was charged with the duty (and so admirably performed it) of producing in a fortnight a miracle upon a certain Home Guard unit somewhere in England. And I take off my hat to the H.G. unit concerned. Teachers and pupils, they worked themselves to the bone during those strenuous days, and the benefits of that long-needed opportunity were reaped in full measure. The transformation is remarkable. It was a triumph of the spirit. The fortnight was one of intense activity on the farms; nearly all the volunteers were working overtime. Yet the nightly attendances were 95 per cent., and the week-end training was almost continuous. The zeal of those French-Canadians was only equalled by their knowledge and efficiency. They left their mark and seal on us, and deeply impressed their personalities on us also. We went in, a rustic, willing, but green and raw material, and emerged from their machine, if not a finished, at least a *shaped* product. Where before we sauntered, we now moved at the double; where before we *guessed*, we now practise on an ordered plan. We have tasted the image of modern war, with a small percentage of its dangers, and we are better fitted to-day to liquidate the Hun from our barns and cottages and woods than ever I thought to see us. And (not least important, though I have said it before) we have learned more of the vital secret of the meaning of Empire (that understanding between the free nations on which our hereafter depends), and of the relation between the Regular and Defence forces of the Crown, than we have learned in two years of studying the speeches of statesmen or the training manuals of Whitehall.

Mr. Evelyn Baring.—It is a sign of old age when one reads of a "mere boy" receiving an important administrative post, and reads the news with surprise. Mr. Baring, who is named Governor of Southern Rhodesia, is no longer a "mere boy," though he is still just "in the thirties." Time does not stand still and most of my "mere boys" are now men of experience in the prime of life. Mr. Baring is one. He began his administrative experience in the Indian Civil Service, and was for a time in the India Agent's Office in South Africa. After that, he had the best possible experience of business in his great family banking establishment. He has many family and hereditary claims to success in Imperial administration. He is the only son of the great Lord Cromer's second marriage, and his wife is a granddaughter of Lord Grey, G.-G. of Canada, and of Lord Selborne, sometime High Commissioner of the Union. He has character, brains, experience and presence, and so has his wife.

THE OLD STAGER

THE COMMANDER-IN-CHIEF, BOMBER COMMAND (Air Marshal Sir Arthur Harris), whose recent broadcast to the German people has created quite a sensation; with him in this picture are Air Vice-Marshal R. H. M. S. Saundby, C.B., M.C., D.F.C., A.F.C., Senior Air Staff Officer—on left; and Air Commodore R. Harrison, D.F.C., A.F.C., Deputy Senior Air Staff Officer—on right

On Tuesday, July 28, Air Marshal Sir Arthur Harris broadcast one of the grimmest warnings yet delivered to Germany and the German people. During the course of it he declared that "soon we shall be coming every night and every day, rain, blow or snow—we and the Americans," and that our losses over Germany—less than 5 per cent.—would not affect the issue. "You thought, and Goering promised you, that you would be safe from bombs," said the Air Marshal. "But now it is just the other way. . . . We are bombing Germany, city by city, and ever more terribly, in order to make it impossible for you to go on with the war. That is our object. We shall pursue it remorselessly. . . ." All listeners agree that the broadcast was amongst the most outspoken yet. On the following day it was announced in the Lords that the statements made by Sir Arthur Harris had been made with the approval of the Government. Somewhat naturally, the broadcast has been received with a howl of rage throughout Germany, some papers going so far as to talk of "murder"—virtuously ignoring the gloating at the time of the *Luftwaffe* attacks on London, Birmingham, Coventry and other British cities. In England, too, certain criticism has been made of the broadcast, and the "Old Stager" refers to the subject in his "Newsletter" comment on the facing page

THREE NIGHT-FIGHTER ACES WHO HAVE JUST RECEIVED THE CZECH WAR CROSS: From left to right are: Wing-Commander the Hon. Max Aitken, D.F.C. (elder son of Lord Beaverbrook); Squadron Leader J. A. F. MacLachlan, D.S.O., D.F.C. and Bar; and Flight-Lieutenant Karel Kuttelwascher, D.F.C. and Bar. All three were presented a few days ago with the Czechoslovak War Cross 1939—the highest Czech award for gallantry—by Dr. Benes, President of the Republic

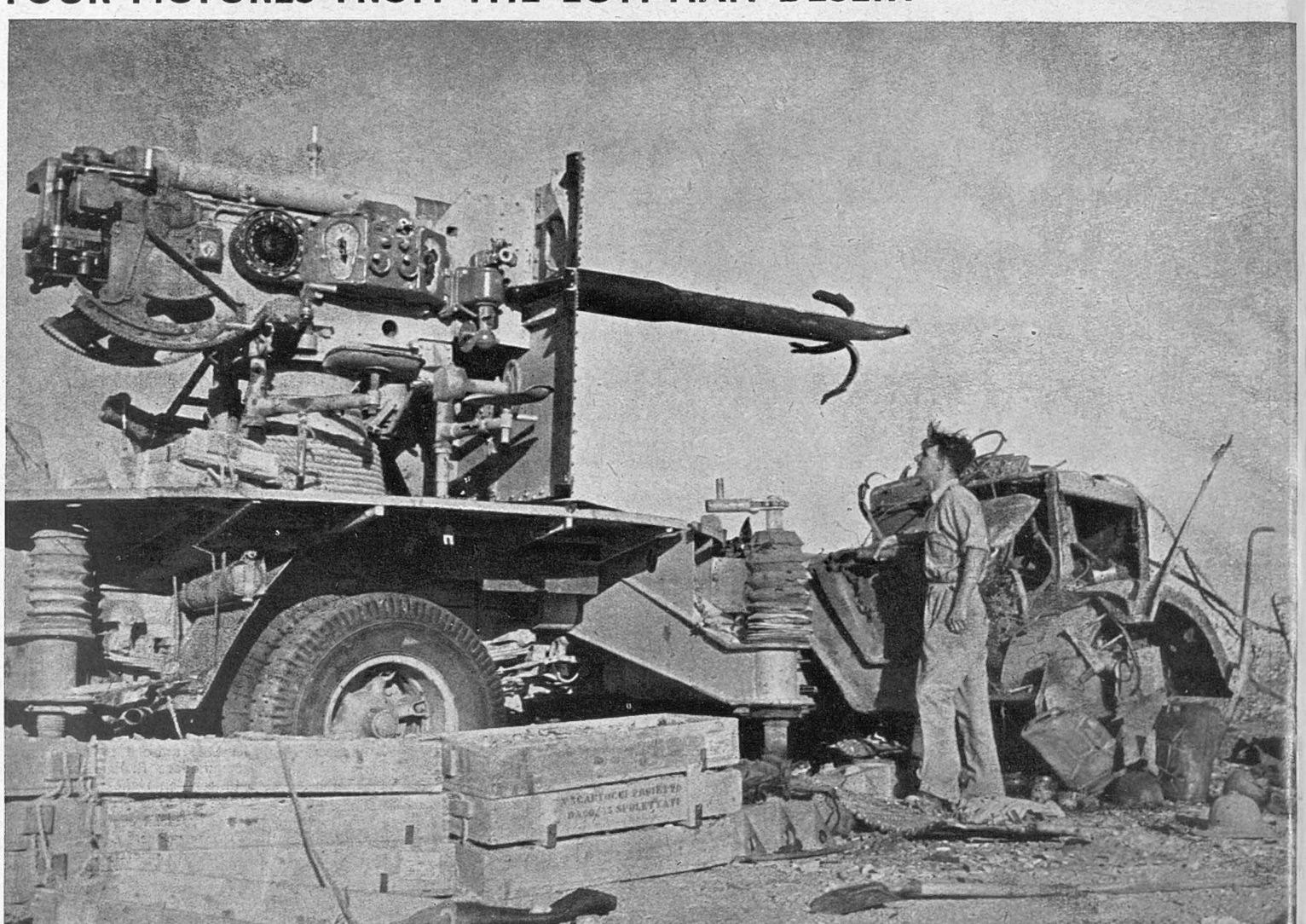
ARMY and AIR FORCE LEADERS

CANADA'S ADJUTANT-GENERAL arrives in this country: Major-General H. F. G. Letson landed here by bomber: his purpose is to arrange for the coming of the Canadian Women's Land Army, and to make a routine visit to the Canadian Army

THE NEW G.O.C., LONDON DISTRICT: Lieut.-General Sir Arthur Smith—a picture made recently during his service in the Middle East

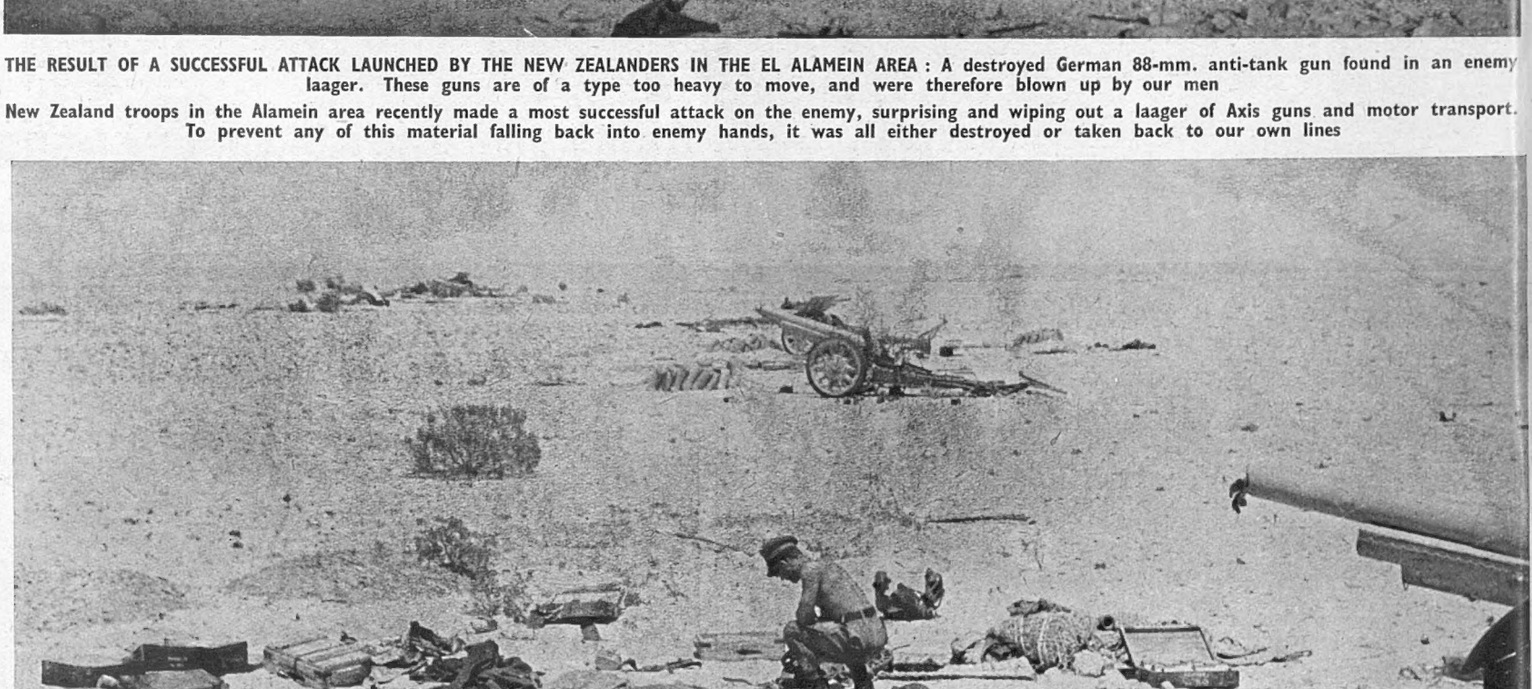
BRITISH ARMY AND AIR FORCE CHIEFS WATCH PARATROOPS IN TRAINING: General Sir Bernard Paget, C.-in-C., Home Forces, and Air Marshal Sir Arthur Barratt, A.O.C.-in-C., Army Co-operation Command, recently visited a paratroop training depot. They witnessed initial training under R.A.F. instructors, when paratroops were dropped in mass before them: both Sir Bernard Paget and Sir Arthur Barratt then spoke to some of the troops and to the Instructors soon after their landing

FOUR P.CTURES FROM THE EGYPTIAN DESERT



THE RESULT OF A SUCCESSFUL ATTACK LAUNCHED BY THE NEW ZEALANDERS IN THE EL ALAMEIN AREA : A destroyed German 88-mm. anti-tank gun found in an enemy laager. These guns are of a type too heavy to move, and were therefore blown up by our men

New Zealand troops in the Alamein area recently made a most successful attack on the enemy, surprising and wiping out a laager of Axis guns and motor transport. To prevent any of this material falling back into enemy hands, it was all either destroyed or taken back to our own lines

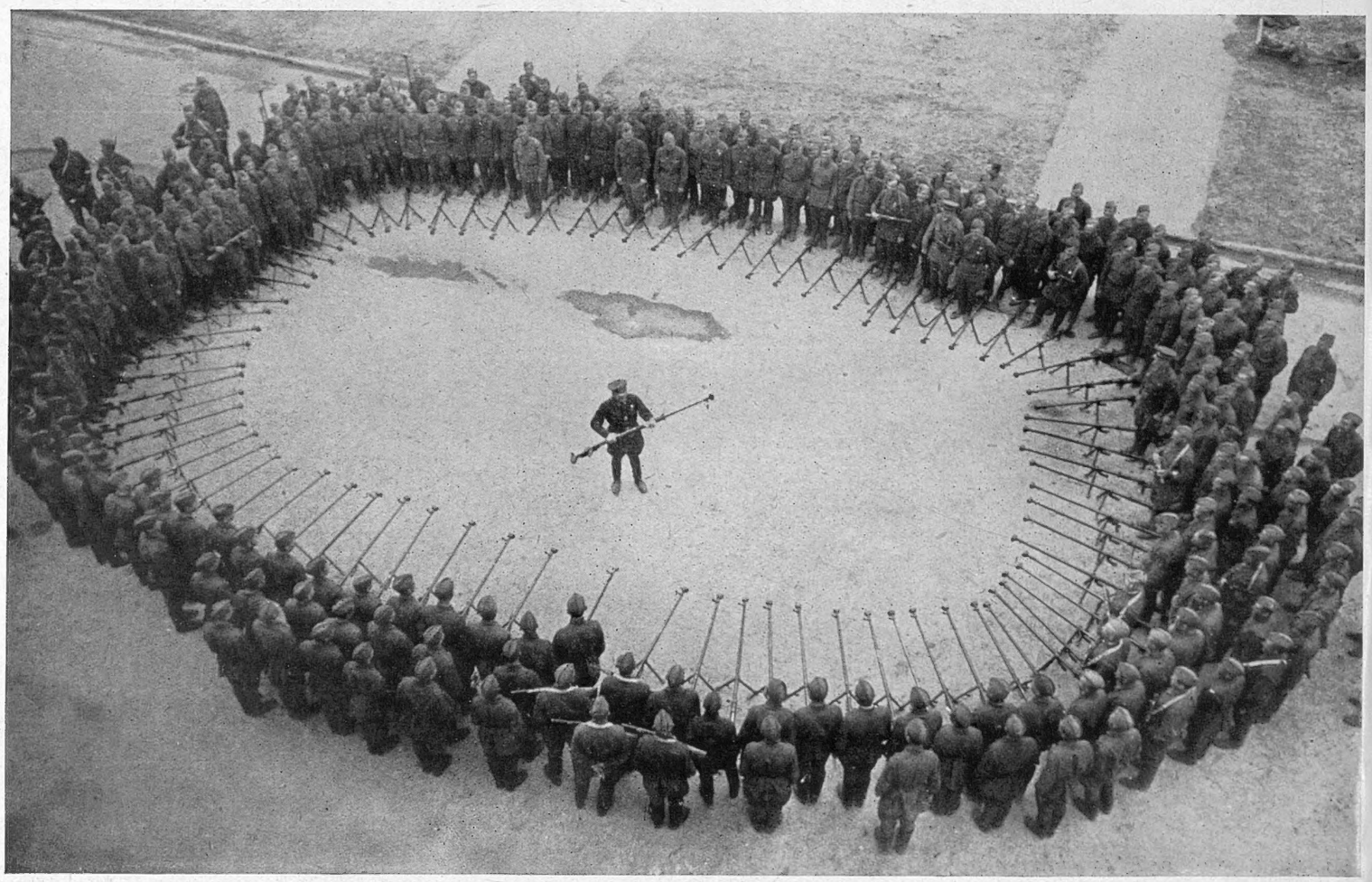


SOME OF THE ITALIAN FIELD GUNS FOUND IN THE AXIS LAAGER ON THE ALAMEIN LINE and blown up by the New Zealanders during their successful raid. The character of the scrub-covered desert is well brought out in this official picture from Egypt

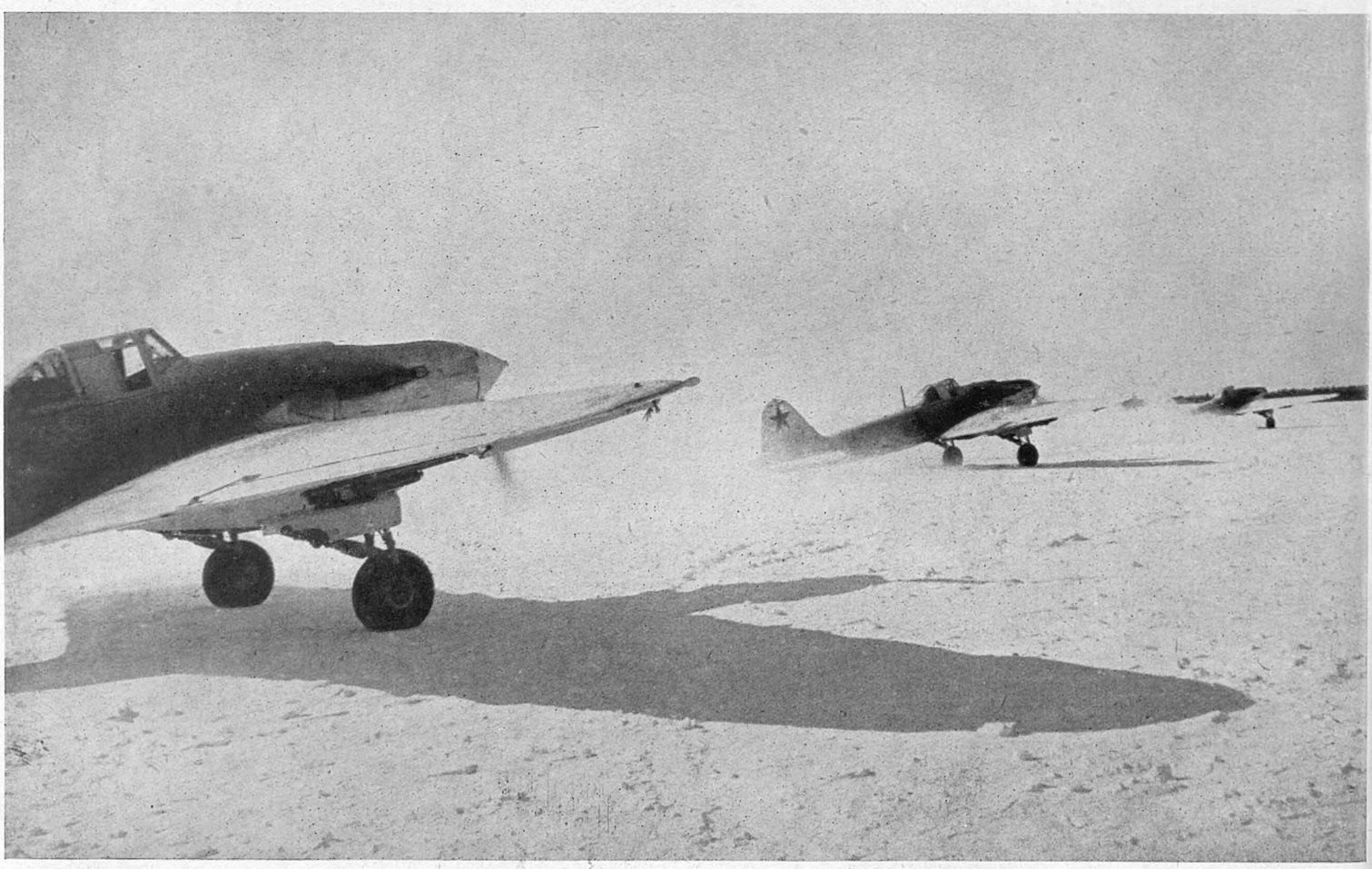
NEW ZEALANDERS FIRING AT STUKA DIVE-BOMBERS : These fine soldiers are quite fearless in action, and Stuka pilots have learned that it is not wise to come in too low when attacking. The New Zealanders greatly distinguished themselves in the initial stages of the fighting in the Egyptian desert

A NEW ZEALAND MACHINE-GUN POST IN A ROCKY PART OF THE ALLIED POSITIONS IN THE ALAMEIN AREA : The arrival of the New Zealanders in the Egyptian desert was immensely heartening in the dark days when Rommel was racing towards Alexandria ; they put up a fine show around Mersa Matruh, in particular, where General Freyberg, V.C., their Commander-in-Chief, was wounded

FOUR PICTURES FROM THE RUSSIAN BATTLE-FRONT



A LARGE CLASS OF SOVIET OFFICERS AND MEN RECEIVING INSTRUCTION IN THE USE OF THE LATEST TYPE OF ANTI-TANK GUN at a Reserve Training-Camp behind the fighting line. Within the Red Army there are now special "Tank Destroyer units" armed with this weapon; they have already achieved notable successes with this new long-barrelled gun, which is carried on the march, and into action, by teams of two men to each gun. Recently, it was reported that huge numbers of reserve troops are now ready to take their place in the great struggle for the Caucasus



THE RED ARMY'S ROCKET-BOMBER—THE STORMOVIK IL2 (the first picture of this new aircraft to be received in Britain). The Soviet Stormoviks seen here are taxi-ing out to their take-off point: these are the aircraft specially armoured for low-level attack against Panzer units, and the first intimation of their existence was given by Lord Beaverbrook some months ago. The technique of the rocket-bomber is to fly the aircraft straight at the target, firing the bomb by rocket in the line of flight, with a flat (as opposed to a vertical) trajectory. In the above picture the bombs may be seen at the rear of the guide-rails under the wings

HOW TANKS AND INFANTRY CO-OPERATE IN THE BATTLES ON THE EASTERN FRONT: When the heavy tanks of the Soviet Army go into action, a number of infantry (usually armed with tommy-guns) are carried on the top. Behind the tanks come more infantry on foot, to consolidate whatever gain the tanks might achieve. This system has also been employed by Rommel in Egypt. It has been stated that the size of some of the new Soviet tanks has taken the Germans quite by surprise: some of them are stated to weigh 40—and even 52—tons each

THE TYPE OF DISCIPLINED AND QUICK-THINKING OFFICER NOW RAPIDLY COMING TO THE FORE IN THE SOVIET ARMIES: This is Senior Lieutenant Mikhalchenko, in charge of a mounted section; he has just been promoted to the post of Assistant Chief of Staff of his unit. He is typical of the new type of young officer

TOO MUCH WAR UNDER QUEENSBERRY RULES?

The Rising Tide of Anger against Nazi Excesses is Leading to Demands that We Play Rough with the Enemy, Instead of Fighting on more Traditional, "Honourable" Lines. Comparison is here Made Between the Methods of Warfare Pursued by Germany and Britain To-day

By FERDINAND TUOHY

JAN MASARYK, Czechoslovak Deputy Prime Minister and man of insight and punch, provokes a remunerative line of thought when he summons us to "discard cricket and Queensberry rules." I feel sure many of us have indulged kindred reflection on and off during the past three years, though not perhaps so starkly restricted in application as Masaryk's injunction. Enraged and horror-stricken beyond measure by the Heydrich massacres in his native land; with the word "Ludice" drumming through his brain, M. Masaryk wants the United Peoples to kill Germans, all Germans, all the time. For him, that will be discarding cricket and Queensberry rules:

"Kill as many Germans as possible, regardless of race, religion, sex or age. To-day I am for bombing open towns, even for killing women and children, to make this terrible war shorter. When the Spanish Non-Intervention Committee discussed whether or not the bombing of undefended villages was justifiable, most of the Committee rose in horror at the thought. But not that vulgar, cheap-champagne producer Ribbentrop. He made a feeble effort to justify such a proceeding. I must make a confession—and this is one of the things for which I will never forgive Hitler—I have come down to Ribbentrop's way of thinking."

The last few words must presumably be read in conjunction with the demand that for each batch of innocent hostages shot in cold blood by the Germans, the Allies should bomb a German village out of sight, at the same time making known why they 've done it.

Now there is no doubt that one reason this is not done is that we are poor agents for the transmission of hatred. Yet one could advance three reasons of a more practical kind. Flying losses are quite high enough already without searching out limited targets—and it would have to be more than a hit-and-run raid to blot out even a village. Secondly, bombings like those of Hamburg must be bringing home to the German people about all that can be brought home. And thirdly, the Nazis are soft-pedalling with their execution of hostages and have begun to deport these instead. They would probably not have made the change out of regard for German villages; they are making it because they realise the terrific force of hatred the executions have built up in the occupied countries.

If he has not seen it yet, one rather imagines M. Masaryk will shortly witness all the fierceness in bombing that he wants—on both sides of the North Sea.

What of cricket and Queensberry rules elsewhere—on the sea and in land warfare?

At sea the Allies save enemy lives chiefly for interrogation purposes, or when there 's little or no risk in so doing; also when they want to bring home a prize. As for Axis crews, they sometimes signal or megaphone that they are sorry—and then leave passengers and all floating on the ocean. On rare occasions, U-boat commanders leave food and water and even compass and chart. The most notable survival of sea chivalry doubtless befell after Matapan, when Admiral Cunningham signalled the whereabouts of hundreds of torpedoed Italians and was thanked for doing so. If the Italians have ever made reply, it has been in their avoidance of bombing non-military objectives on Malta.

When the Germans appear to play cricket, it is wise to smell a rat. Here M. Masaryk is on firmer ground in warning about Rommel. "I have been told," he says, "that Rommel fights in a gentlemanly way. Do not be misled. If it suits him, as one of Hitler's gangsters, to pretend to be a little more humane than usual it does not mean that he is any different from the rest." Part of Rommel's pretending took the form, I believe, of giving captured British water and then letting them wander back to their own lines, which could be a cunning German attempt at sowing lack of resistance. A resembling piece of Nazi cunning was invented by Nazi Boss X, when he ordered that certain prisoners of war—I abstain from indicating their category—were to be specially looked after from the moment of their being taken. This is done in the hope that beneficiaries, so popular themselves as a body, will spread tidings that Germans are not such bad fellows, after all; even in the wider hope that one day they may, as released captives, emerge in the totalitarian mould and help either in putting over a Nazi victory already won, or in aiding with a drawn-war situation.

Being such poor haters—partly due to our immunity from the worst horrors and to difficulty in visualising them in the case of others—it is necessary for us to be doubly on our guard when confronted by men who, once out on the killing game which is war, recognise only weakness and decadence in "cricket" and who on most, if not all, occasions take advantage of those who play it.

Meanwhile, Mr. Churchill has promised that if they want to play rough, so will we, and one cannot help thinking that Hamburg and a few more like it are rough enough stuff to go on with. Particularly as it has seemed to me that where we have excessively indulged cricket and Queensberry rules has not been so much in relation to the actual arena as to a rigid keeping within an International Law, so little of which, outside the Red Cross, has been respected by our opponents.

I recollect but one instance of Britain daring to venture beyond International Law—the *Altmark*—and the country certainly did not have to appear as culprits before the universe after that blithe exploit in Norwegian territorial waters.

The enemy accused us of banditry when we went into Bagdad and Teheran, though in each case there was the clearest right to do so under treaty. That the Foreign Office should have been complimented here at home shows, however, the usual measure of our coyness. Vichy affected to see red over Syria, which it was about to open to the Axis—and this although we erred by edging in behind flags of truce and getting into a jam in consequence. And if Madagascar was violating International Law, then there is no sense in our saying we are on the side of Fighting France, which was all for our taking Diego Suarez.

We get too tied up by cricket and Queensberry rules on occasion, when it comes to the planning of action in given eventualities. I cannot see for the life of me why we should either sink or watch being scuttled the admirable French light squadron at Alexandria. We want these ships—and how! Darlan orders Admiral Godefroy to stay where he is until the Axis takes over Alexandria and everything inside of it. We invite the Frenchman to leave through the Suez. And there the position still is at this writing, with us hoping that Godefroy will prove amenable should Rommel come any nearer. It was left to the de Gaullist Admiral Auboyneau to speak from the shoulder when he told Godefroy: "You have not the right to keep these ships outside the struggle for the freedom of your country. You pretend to be prisoners of the English. Morally, you are voluntary prisoners of the Germans! In ceding to their pressure you maintain silent the weapons which France confided to you." That is the way to speak; after which one arranges pussyfoot boarding-parties in the night . . . but no, *nous jouons le cricket.*

Unfortunately, cricket too studiously followed may lead up to things like Oran, which the Free French of that day admitted was a dreadful necessity, and which Laval would like to see repeated at Alexandria on account of the damage it would do the United Nations with French people.

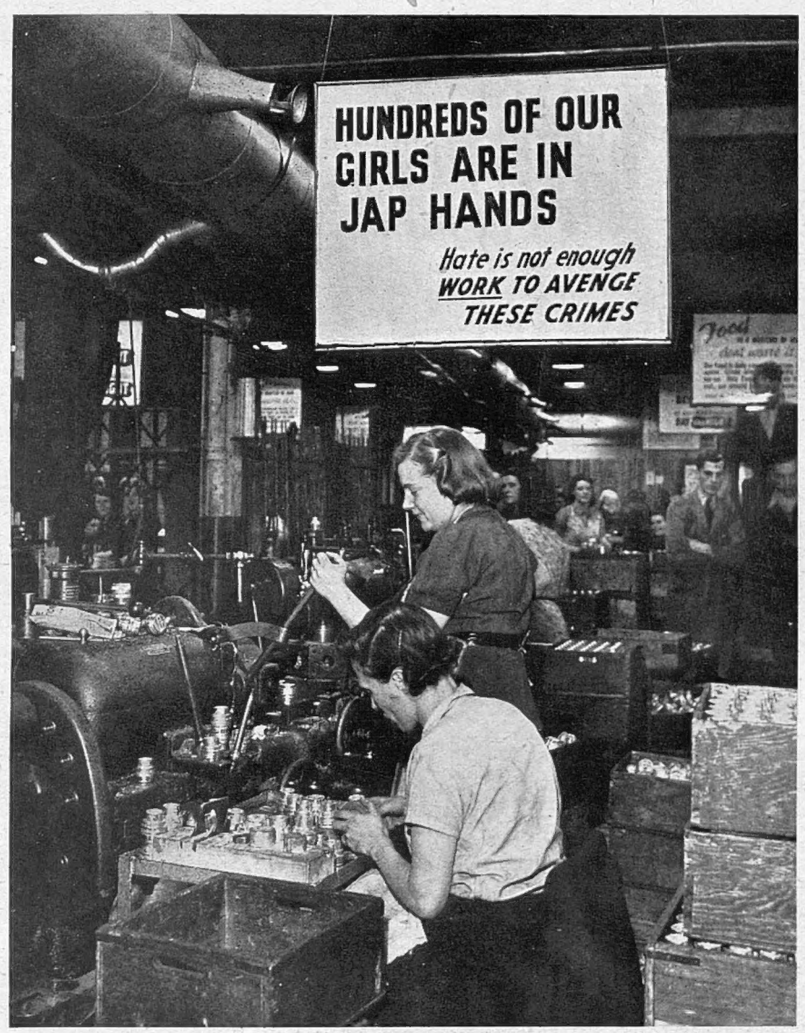
A more serious aspect of cricket-playing in this brand of war concerns the question of opening fronts where circumstances suit the Allies best. We know that Hitler will go in anywhere he chooses without the slightest question of a by-your-leave. But will we? Are we prepared to tread territory on the sole premise that by so doing we shall be liberating the *rightful* owners of that territory?

The non-bombing of Rome has been up for judgment time and again. The position is that here is the hub and centre of the Fascist effort and also of a good deal of the German ditto. Whitehall has been bombed; so has the Wilhelmstrasse. But not the Quirinal. We are told that if the Allies attacked Axis war direction in Rome, Göring's men would bomb the Vatican with British bombs and that then the fat would be in the fire with Catholics all over the place. Yet we know well that the Vatican is as far from valuable Axis targets in Rome as is Whitehall from Kensington, and that the R.A.F. could miss outstanding St. Peter's as easily as flying. I am not suggesting the bombing of Rome, which might not yield adequate return, only querying the reasons advanced for not bombing it.

No doubt some of our hesitancy is due to recognition that we are not as strong as we 'd like to be, and that it behoves us to go carefully. One can see this operating in the case of one or two who object to the blockade, and who in stronger circumstances might be simply reminded that they are squeaking against their own ultimate succour. But if you think this matter out, of cricket-playing on the glorious pitch of International Law, you will find case after case where we have been pretty close to saps.

When we were briefly within 200 miles of Ploesti, and knew what Antonescu was up to, why were not those oilfields blitzed and blitzed? Why have we allowed diplomatic agents for the Axis to squat in capital after capital—as some are still squatting in capitals nominally under Allied protection? Why do Great Powers allow a minor one to get away with turning the *Graf Spee's* crew more or less loose so that it may operate again for Hitler? (No wonder he ordered that crew to stay alive!) Why are certain ports, supposed to be outside hostilities, allowed to continue to refuel and restock U-boats? One even doubts at times if we 'd use a new weapon lest its effects—like gas formerly—hardly came under Queensberry rules.

But I do not wish to appear to force matters—or some may call it nagging. I call it a plea for a bit more hard realism.



BRINGING HOME THE FACTS OF THE WAR SITUATION TO WORKERS by means of a series of very large, vivid and inspiring notices has already had excellent results at a Ministry of Supply factory in the Midlands. Miss Lily Hammal, at work on her lathe, is standing beneath one of these

THE OLDEST DESTROYER IN THE ROYAL NAVY

H.M.S. "Skate"—900 tons, built in 1917—which has Just Celebrated Her 25th Birthday at Sea

An impression (from personal knowledge) of the veteran vessel whilst on her present task of guarding the Northern Convoys—*By Montague Dawson*

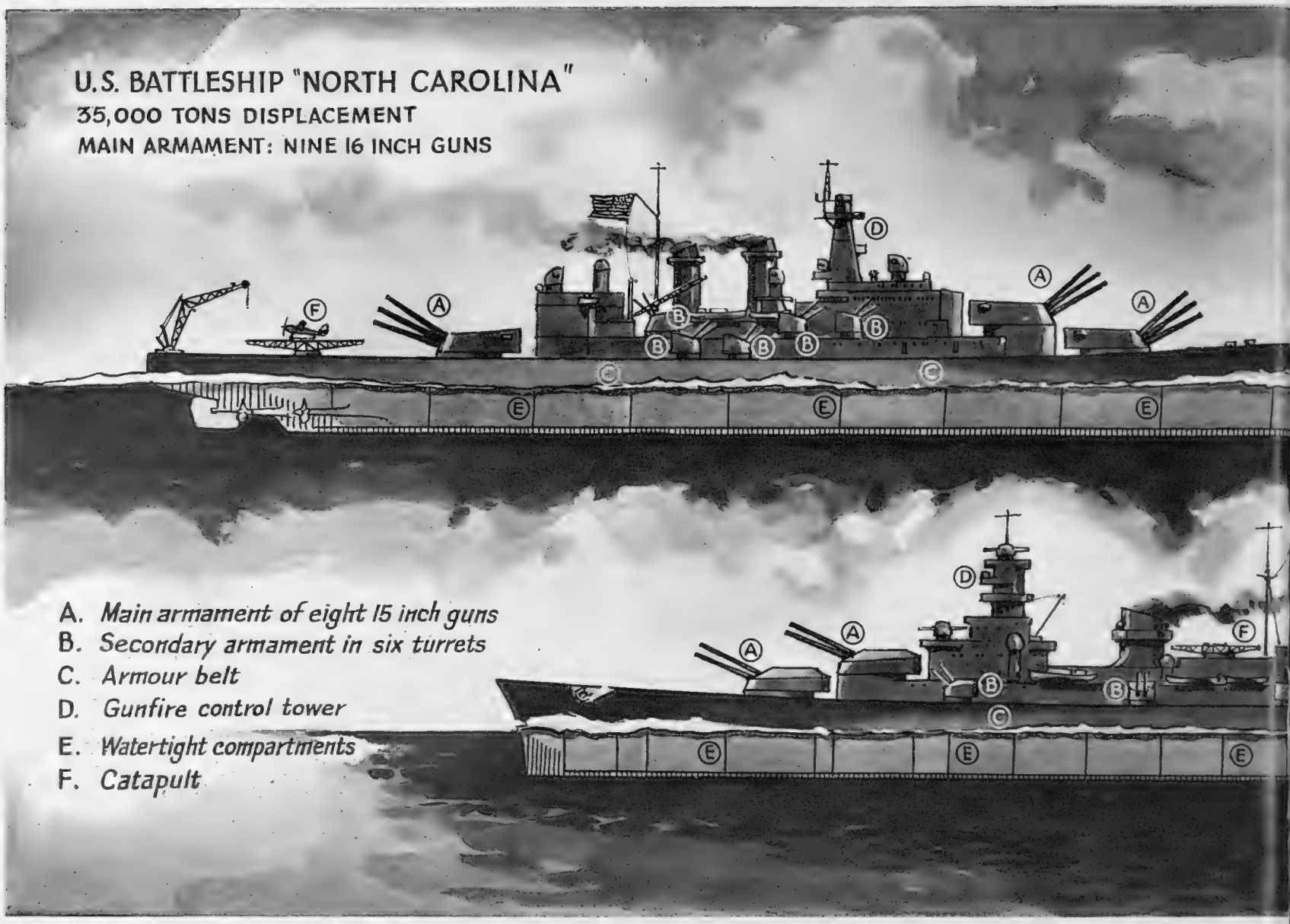
Britain's oldest destroyer is H.M.S. *Skate*, which has just celebrated her Silver Jubilee afloat: twice torpedoed in the last war, this veteran still guards the convoys which run from a Northern port. H.M.S. *Skate* is the last remaining ship of the old "Admiralty R" class, and she is now the only three-funnelled destroyer in the Royal Navy. She was built by John Brown and Company on the Clyde in 1917, and was launched on January 11 of that year. In the Great War she served with the Harwich Flotilla: she was torpedoed during the year in which she was commissioned, and was hit by another torpedo in the following year; but she was back in time to bring into Harwich the German U-boats after their surrender. (She hopes to do this a second time!)

Skate is a vessel of 900 tons: she has a length of 265 ft., with a beam of nearly 27 ft.: she has a speed of 31 knots, and carries a complement of 98. Before the war this vessel mounted only two 4-in. guns, two torpedo-tubes forward, and carried minelaying chutes aft. She is now described as being armed with three 4-in. guns, one two-pounder pom-pom, one machine-gun and four Lewis guns: and her torpedo-tubes now number four—21-in., mounted in pairs.

True to form, H.M.S. *Skate* spent her twenty-fifth birthday at sea. In the previous twelve months she had steamed thousands of miles, missing only one convoy job in that time. Her twenty-fifth birthday was celebrated with a special Jubilee Dance when she returned to her base. In the destroyer's wardroom is a framed, illuminated plaque wishing her many happy returns, with greetings in Polish and signed by the officers of her "chummy ship," a Polish destroyer.

For her birthday present she received a refit and a new ship's company, but the affection of the men for the ship was so strong that many tried to rejoin her when they were paid off. On the day she recommissioned the first man across the gangway was the Yeoman of Signals, who had already served six years in the ship.

b



GUN-POWER IN THE BATTLE OF THE ATLANTIC: U.S. AND GERMAN NAVAL IDEAS COMPARED; or what the two navies have striven for in their major naval weapons as exemplified in the two newest battleships—the U.S. "North Carolina" and the German "Tirpitz"—*Drawing by Wm. McDowell*

The German policy of warship design is to build a battleship which is as fast as is consistent with very heavy protection, subdivided into as many compartments as possible to reduce the possibility of sinking by torpedo attack, and to rely for hitting power on the accuracy of gunfire. Consequently, the *Tirpitz* has a gunfire control system on which the best scientific brains of Germany have been lavished. Her speed and displacement are considered to be approximately equal to those of the American North Carolina class; but the latter, with more 16-in. guns, is capable of throwing a heavier broadside and at a greater range. The *Tirpitz* (like the *Bismarck*—sunk in action in the Atlantic on May 27, 1941) has a main battery of eight 15-in. guns, against the *North Carolina's* nine 16-in. guns—thus giving the latter a 25 per cent. advantage. "In the hit-and-run battles that German seamen still count on," writes one expert, "speed and protection are their trump cards, accuracy their no-trump aces. It was thus the *Bismarck* sent the *Hood* to her grave. Like the *Graf Spee*, it was only when her fire-control machinery was smashed that she lost her punching power." The drawing by Mr. McDowell above points out the essential contrasts in naval design demonstrated in these two most modern men-of-war

THE NEW IDEAS IN GERMAN U-BOATS (see *drawing at right*)

Some important things have been learned recently in the United States concerning the nature of some of the newest German submarines. Examination of a captured vessel has shown that its sturdy construction enables them to submerge to nearly 600 ft., twice the usual operational limit of depth-charges; a newly-improved motor has also helped to give some U-boats greater speed at sharp-angle crash-diving. Such German submarines (following ideas of Vice-Admiral Karl Doenitz) are now powered with a single, modified Diesel engine, which burns oil at the surface, and a mixture of hydrogen and oxygen when submerged. Other submarines use oil-burning Diesels on the surface, and electric motors under water. With the old electric motors and batteries (which accounted for about one-sixth of a submarine's weight) eliminated, the U-boat is more manœuvrable; with the space gained, the torpedo load can be increased and the cruising range extended: even some of the smaller U-boats now have ranges up to 12,000 miles. They carry smaller tubes, allowing standardisation of torpedo manufacture for aircraft, motor torpedo-boats and submarines. Retractable deck-guns, eliminating the previous delay between surfacing and unlimbering the conning-tower weapons, enable the submarines to open fire almost at the moment of surfacing

On left—**THE SKILL AND PLUCK OF THE A.-A. GUNNERS ON OUR SMALL NAVAL CRAFT: A shot from a British launch "disintegrates" one of the latest-type Nazi fighters**—*Drawing by Wm. McDowell*

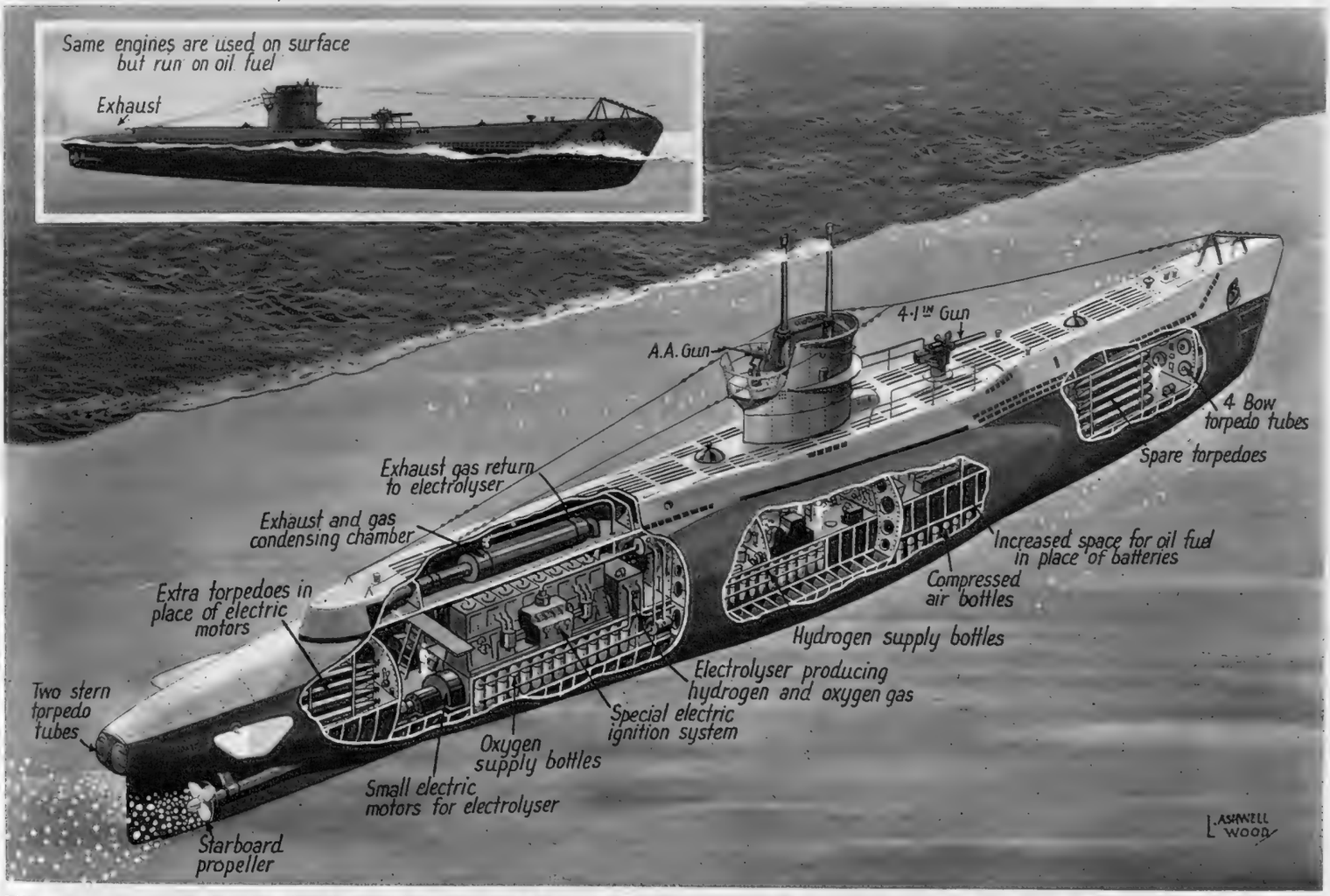
Four German F.W. 190's, Germany's latest-type fighters, attacked with bombs and cannon-fire a convoy consisting of a single merchant ship and two escorting motor-launches. One aircraft was hit by gunfire from a motor-launch commanded by Lieut. M. C. Waylen, R.N.V.R., and "disintegrated in the air" in the manner shown in the accompanying drawing. One officer and three ratings were wounded in this spirited and courageous action

BATTLESHIP GUN-POWER

And Details of the New German U-boats Operating in the Atlantic

A. *Main armament of nine 16 inch guns in three turrets*
B. *Secondary armament in ten turrets*
C. *Armour belt*
D. *Gunfire control tower*
E. *Watertight compartments*
F. *Catapult*

BEFORE IT BECAME AN R.A.F. TARGET—German submarines at Rostock : At this Baltic port U-boats are (or, rather—since the very heavy raids by British bombers—were) built ; it was also the spot at which Heinkel parts were manufactured ; and was a seaplane base and a supply port for the German Army in Northern Russia



THE NEW IDEAS INCORPORATED IN THE LATEST GERMAN U-BOATS, AS DISCOVERED AFTER EXAMINATION IN AMERICA OF A CAPTURED ENEMY VESSEL
The same engines are used for both surface and under-water running, to save weight and space. (See notes on left)—*Drawing by L. Ashwell Wood*

GERMANY'S SUBMARINE CAMPAIGN AGAINST THE MERCHANTMEN

United States Shipping Losses in the Battle of the Convoys —A Very Serious Situation and the Possible Remedies

Discussed by DOUGLAS GLEN

SURELY the few published facts, made available to us mainly through the candour of the American Press, are enough in themselves to drive home to everyone the extreme gravity of the shipping position.

Off the coast of Canada, along the whole Eastern seaboard of the United States, Mexico and the northern part of South America, there has been a grim progression in the rate of sinkings ever since Pearl Harbour. It is in those waters that the heaviest losses are being suffered, yet they are only part of the tale. There are the losses on the supply route to Murmansk, on the long, roundabout voyage to our Army in Egypt, and on our world-wide trade routes. The sum total of Allied tonnage sunk over all the Seven Seas since the beginning of the year is probably not less than 5,000,000 tons, and may even exceed that figure. Take into account ships damaged but not sunk, and the full measure of the danger must be abundantly clear even to the most confirmed optimist.

Disregarding the wishful exaggerations of the Axis, and taking only the published figures, the scale of increase in losses on the Atlantic seaboard can be seen at a glance. In January, 17 ships were sunk, in February, 36; in March, 60; in April, 58. The total for May rose sharply to over 90; but a still higher level was reached in June, when sinkings were in the region of 860,000 tons. It is unlikely that the July figure, which cannot be accurately estimated for some time yet, will show any improvement, for the United States War Shipping Administration has reported that losses for the third week of the month were the heaviest since the beginning of the war.

What makes these losses in American waters so disturbing is that we and Russia and China look to the United States and Canada for the raw material and the war material, the food, tanks, planes, guns and munitions which only the continent of America can produce in such vast quantities as to overwhelm the Axis. True, plenty of land-based aircraft and light anti-submarine vessels, in addition to the convoy system, have rendered the neighbourhood of our shores comparatively safe. But the essentials for our maximum war effort have first to run the gauntlet of fierce attrition in the initial stages of their journey from the other side of the Atlantic.

That is the situation at present and at its worst: if losses were to continue at the same rate, and ship production were not speeded up enormously to overtake the wastage, the outlook would indeed be black. The United Nations cannot lose 10 or 12 million tons deadweight a year, and that is not an overestimate by any means. Rear-Admiral Vickery, Vice-Chairman of the United States Maritime Commission, has declared publicly that ships are being lost faster than they are being built, for it must be noted that the sinkings during the months from May to July were much greater than from January to the end of April.

Against an enemy commanding the forced labour of all Occupied Europe, it is not enough to sweep his U-boats from our near waters and ward off invasion; we cannot wait to wear him down in the immense areas he has conquered and overrun while our tonnage is dwindling away. We need ships in abundance to supply our armies in Egypt and the Middle East; we need them to keep open our life-lines, keep Suez, regain the Mediterranean and the Far East, and to supply our Allies. The condition of every venture we may yet undertake, as of our very existence, is shipping. A voyage of 12,000 miles is needed to supply the Army in Egypt; imagine how much tonnage is used to transport the tanks, planes, guns and food they must have; and guess how much material was lost when we were driven out of Libya, and all of it had to be replaced over that great distance—by still more ships.

Fortunately there is good reason to think that both here and in America men of great ability and imagination have taken steps to meet the danger, and it will be overcome in time as surely as a similar threat was overcome during the last war. There are three ways in which this can be done, and perhaps it will only be by a combination of all three that success will be attained.

STICKING TO HIS POST—a dramatic picture from the Caribbean: The U.S. Navy gunner on the stern of the merchantman is standing by his gun after the ship had been torpedoed by an Axis submarine operating in the Caribbean Sea. He was the only man left aboard, the remainder of the crew having abandoned ship. The gunner stuck to his post, hoping for a shot at the submarine before the vessel went down; but the U-boat discharged another torpedo, which the gunner spotted coming for him. He was able to jump off just in time to save himself from going up into the air with the stern in the subsequent explosion. The picture was taken from one of the ship's lifeboats. The name of the gallant gunner has not been revealed

ONE OF THE CANADIAN NAVY'S NEW MOTOR PATROL-BOATS, passing through the St. Lawrence to take up the fight against the U-boats: This is the first picture to be released of these fast, well-armed vessels. Fitted with depth-charges, Fairmiles are being produced in Canada specially for the job of submarine-hunting. They have a length of 112 ft.; twenty of these patrol-boats were ordered on January 1, 1941

First, the U-boats must be hunted down and destroyed faster than Germany can build new ones—and German production is at a high level. Secondly, production of ships must increase to an extent that will not only replace losses, but greatly exceed them. And, lastly, this dual effort must be supplemented by the development of the cargo-carrying plane to huge dimensions.

Germany has probably about 300 submarines, and is building at a rate which, up to the present, has kept her under-water strength almost constant. Construction, however, has reached its peak, and it is certain that she will not be able to maintain that figure when America's colossal effort is a little further advanced. Carl Vinson, Chairman of the House of Representatives Naval Affairs Committee on the Navy Bill in June, declared that the United States Navy's plans called for the complete domination of the Atlantic and Pacific Oceans. The 2,100,000,000-dollar programme then outlined included 800 patrol vessels, destroyers totalling 900,000 tons, aircraft-carriers, 500,000 tons, and cruisers, 500,000 tons.

The United States has been at war for only eight months—little enough time in which to gain the practical knowledge necessary to deal effectively with the menace of the U-boat. In that short time, benefiting by the pooling of ideas and our hard-won experience, she has revolutionised both her programme and her methods. The huge appropriation in June, Mr. Vinson said, included no new battleships, and although powerful battleships are under construction, main reliance is being placed on aircraft-carriers, combat vessels, and land-based aircraft.

It would be unwise to count upon any spectacular drop in the numbers of sinkings in the immediate future; there have been too many optimistic predictions already, forecasting that the menace would be overcome by May. British shipyards have had to give priority to naval construction, especially to the production of escort vessels; skilled labour is short, and raw material has to be brought from America in our dwindling, overworked cargo-ships — the problem of transport again. Yet, with all our difficulties, and in spite of the scrapping of shipyards in lean pre-war years, British and Empire shipbuilding exceeds one million tons. It is small compared with the losses, but it is when we turn to the almost incredible programme of the United States that we see the promise, however long deferred it may be, of the ruin of Admiral Raeder's design.

President Roosevelt's programme makes provision for 8,000,000 new tonnage this year, and for 15,000,000 next year. And there is every chance that both these forecasts will be exceeded. The Americans have no equals in mass production and the use of machinery, and those who are in a position to know best are confident that the total for 1943 will reach 20,000,000 tons. The present rate of production is two ships completed every day, against one in ten days in 1939. This remarkable acceleration is only a foretaste of what can be expected next year. War brings many surprises, usually unpleasant ones, and we have had our full share in this one. The surprises still to come will perhaps be in the air, where development of new devices is most pronounced, and new forms of attack on shipping may conceivably keep pace with the increase in shipbuilding, thus minimising the effects of a stronger anti-submarine campaign and the larger tonnage. Such considerations, as well as ordinary prudence, give added interest to the suggestions recently put forward by American shipbuilders for the creation of a fleet of cargo-carrying planes to outwit the submarines. The greatest shipping contractor in the States, Henry Kaiser, proposes to build 5,000 of these planes in his own shipyards, each with a carrying capacity of 70 tons. Production would begin in six months, and a committee has been appointed to investigate the idea.

Serious as the situation undoubtedly is, and anxious as the weeks and even months must be until some or all of these measures confound the tactics of the U-boats, there is good ground for confidence that, as in the last war so in this, we shall beat the U-boats . . . and that at no very distant date.

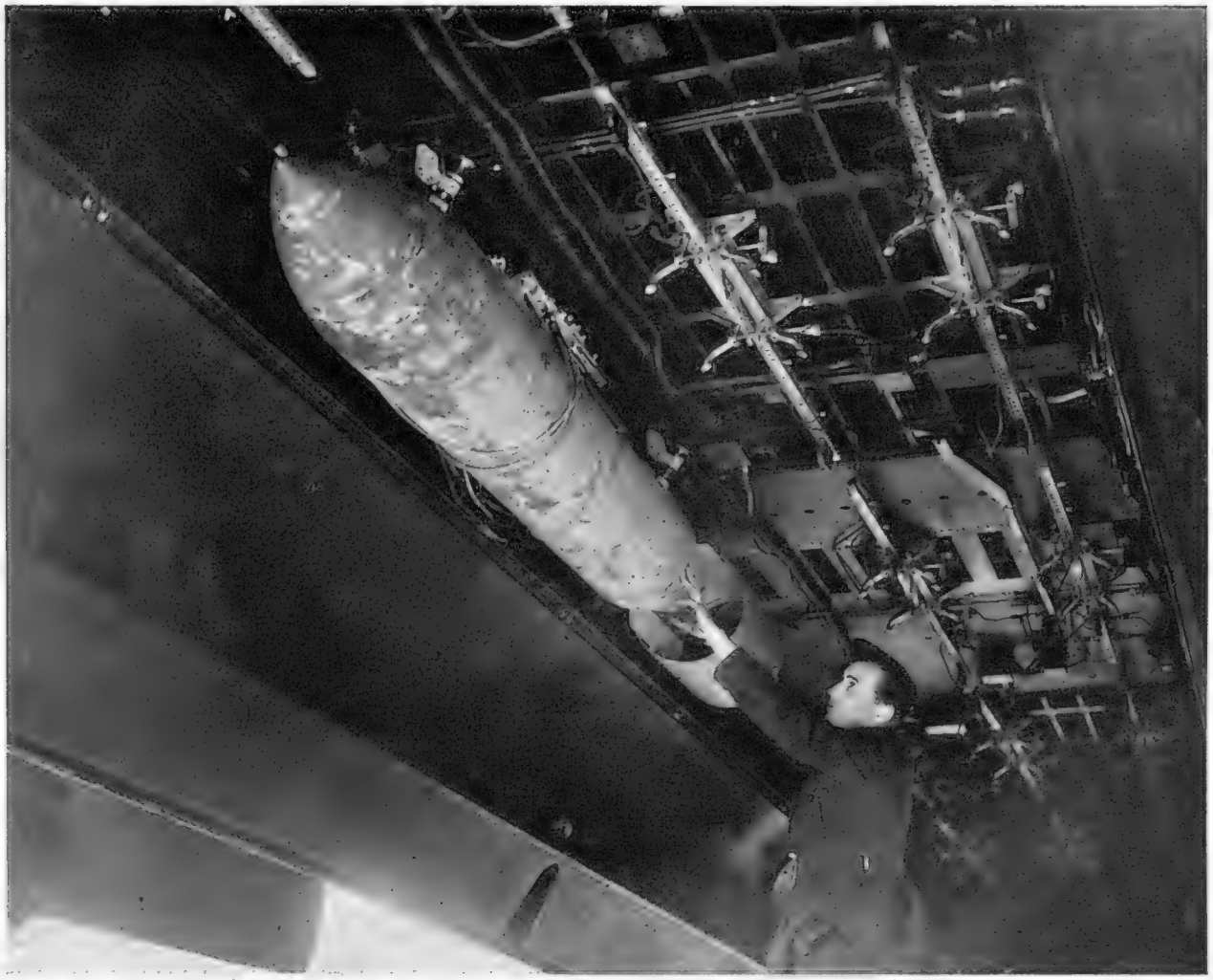
BOMBS

High-Explosive and Incendiary—for Delivery by the R.A.F. to Germany

When London was standing up to heavy punishment at the hands of the *Luftwaffe* over a year ago, there was often speculation as to the size of some of the heavier German bombs. It is very doubtful whether any of these were as big as those now being used by us over Germany! On the left is a 2,000-lb. specimen: packed with high explosives, its effect on German towns can well be imagined. But—this is by no means our heaviest: it has recently been disclosed that in raids on Duisburg, Hamburg and other places, the R.A.F. have been releasing bombs weighing twice as much as that shown in the picture—4,000 lb. The effect of these has been "spectacular": the blast alone from them must be terrific.

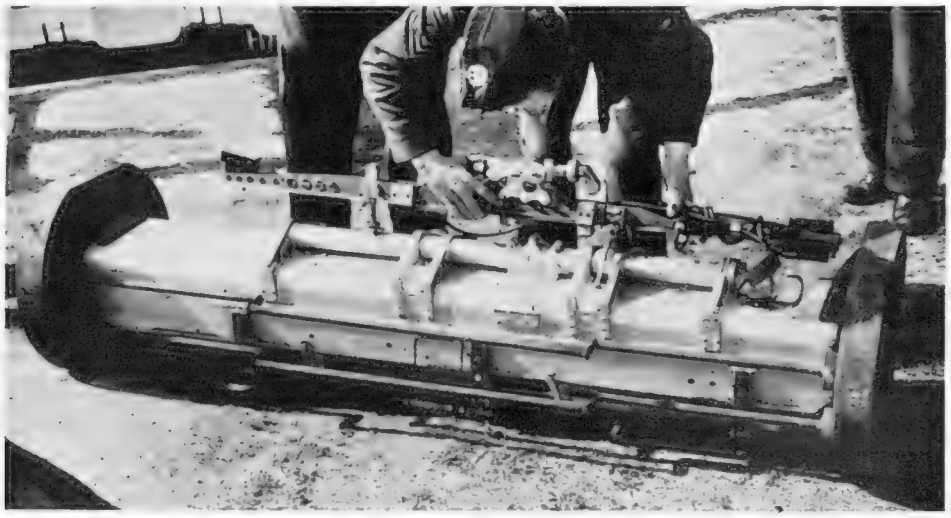
In addition, the Germans are also being taught something about incendiaries. By this means, the *Luftwaffe* hoped to burn down London. By this means, the R.A.F. are to-day causing something akin to panic throughout Germany. On Hamburg alone, within the brief space of thirty-five minutes during last week's raid on that city, no fewer than 175,000 were dropped by British aircraft.

Not for the first time in the history of this war has a weapon been turned in the enemy's hand!



A NEW TWO-THOUSAND-POUND BOMB BEING FITTED INTO THE RACKS OF A TWIN-ENGINED MANCHESTER: Although nearly a ton in weight, this big bomb is still only half the weight of some of those dropped on Duisburg, Hamburg and other German towns

THIS IS THE UNDERSIDE OF THE CONTAINER: It has been filled with a good number of incendiaries and will later be hoisted up into the aircraft's bomb racks by means of a winch



HOW FIRE-BOMBS ARE PACKED FOR CONVEYANCE TO GERMANY: Within this container are a number of incendiaries: the latter only are released when the bomb-aimer presses the button, the container itself remaining in the bomb compartment

LOADED BOMB TROLLEYS AWAITING DELIVERY TO THE AIRCRAFT: This picture shows only a portion of the total number gathered on the airfield for one raid on Germany

HOW THE FIRE-BOMBS ARE RELEASED by the bomb-aimer seated in the nose of the aircraft. He presses the button in his right hand: the container and the tinned-plate case will then remain on the aircraft, whilst the incendiaries will be spilled out over their targets. The container will be refilled with full cases later, and the empty cases will be refilled with more fire-bombs—for other raids on Germany

AN ENEMY RAID ON AN EASTERN COASTAL TOWN: The spring and early summer phase of the German air attacks on Great Britain—*Drawing by Roland Davies*

"Early to-day a single raider dropped bombs on an East Coast town" has been a familiar news-item in the morning and evening newspapers during the spring and early summer of this year. The sporadic, lonely raider later came over with one or two additional planes, and the resulting fires and casualties became more serious—although the local A.-A. defence and the A.R.P. services were rarely fully extended. The "Baedeker" raids on Bath and Norwich were exceptional in character; the typical East Coast raid in the period under review was locally disturbing, but small in its general results. To take a particular case—when a small force of enemy raiders visited a town on the East Coast, "several big fires were started on the outskirts of the town." These lit up the surrounding countryside and gave the local Fire Service a busy hour or two. Then high explosives would be dropped on another night, "inflicting some casualties, of which a few were fatal." All these districts carried on, although their streets were from time to time sprayed with bullets and their connecting rail services were attacked

THE GERMAN "NUISANCE RAIDS"

The Probable Reasons Behind the Present Policy of the Luftwaffe, Discussed by PATRICK HAMILTON

OVER half the German fighter strength, and possibly 25 per cent. of the bombers, are still in Western Europe. The fighters are kept well occupied—the R.A.F. sees to that. But what occupation has Goering been able to find for the bombers, and why are they retained in Europe when they would obviously be of the greatest possible value in Russia or Libya?

In the first place, remember that the *Luftwaffe* is essentially an army co-operation air force. As long as German troops are in Western Europe, the *Luftwaffe* must be there too, and on a scale sufficient to give the German soldier the kind of support to which he has always been accustomed. The whole tactical system of the German Army is interlinked with the *Luftwaffe*, and any attempt to divorce the two would not only be exceedingly bad for the morale of the German troops, but it would impose on their leaders a set of problems entirely foreign to them. German officers have always been taught that the success of their army has been due mainly to the effective interlinking of the land and air arms. To ask them at this stage to undertake a task which they have always been taught is impossible—to dispense with adequate air support—is something at which even Hitler might well hesitate.

Somewhere in the neighbourhood of four hundred bombers are therefore probably stationed west of the German frontier in Occupied Europe. Many of them, such as the Ju.88s and the large Focke-Wulf Kondors, will be working full time on their official job of convoy attacking—a task which we must admit they do courageously and sometimes with considerable effect. The Kondors, for example, are based on Bordeaux. Their usual procedure is to cruise from thence in one flight to Norway, attacking whatever shipping they meet en route. After a stay of about 24 hours on the Norwegian aerodrome, they repeat the process in reverse. The Ju.88s are smaller day-bombers and operate only in narrow coastal waters.

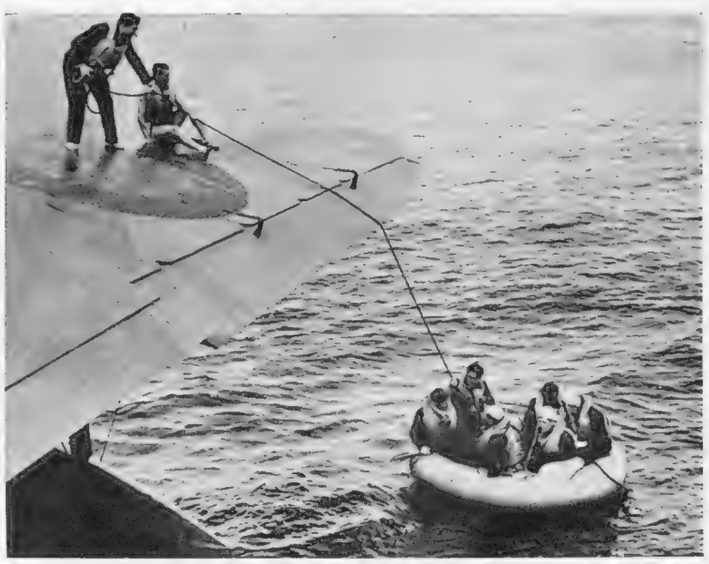
But even this work will not account for more than half the bombers now stationed in France and Belgium. The rest are occupied mainly in pin-pricking night raids on towns in the coastal areas of Great Britain. Although every attempt is made by the enemy to make these operations as safe as possible, they are nevertheless not devoid of risk. Three or four night bombers are usually shot down each week on hit-and-run raids, and when Baedeker raids are attempted the losses mount considerably. When Canterbury was attacked, the *Luftwaffe* lost twenty bombers—eleven over England and nine over their bases in France. But excluding such occasions as these, the *Luftwaffe* has lost about fifteen bombers in minor pin-pricking night-raids in each of the months of April, May and June this year. The benefits to Germany are not obvious. In April this year, 938 people were killed and 998 injured; in May 399 killed and 425 injured; in June 300 killed and 337 injured. For this achievement, Germany lost about eighty machines and 250 trained men.

So, simply put, one would assume that Germany would soon call off so unprofitable a venture. But there are many reasons why it does, in fact, pay Germany to keep up night raiding on this Lilliputian scale, and we need never expect to see it completely abandoned.

In the first place, there is the problem of training the *Luftwaffe's* young entry. It is known that new German pilots are being pressed into service after about only 90 hours' training flying. They complete their schooling in the quieter theatres of war, and for this purpose these night coastal raids make ideal "nursery slopes." Secondly, there is the problem of giving *Luftwaffe* men from Libya and Russia recuperating periods in areas where the fighting is less intense—while in France they do at least spend their off-duty hours in comparative comfort and security. Yet again is the imperative necessity, as long as the R.A.F. bombs Germany, of providing the propaganda machine with at least a substratum of truth for the consolatory reports it publishes of the terrific pounding which the *Luftwaffe* is giving Britain!

The fourth and soundly practical argument is that even such desultory raids do compel us to maintain throughout the length and breadth of Britain, thousands of men—A.-A. gunners, searchlight and radio-location crews, pilots, aerodrome personnel and ground crews, as well as hundreds of night-fighter planes, which we would otherwise use elsewhere.

The German objective is quite clearly to maintain raiding on the lightest scale which will compel us to maintain our defensive system substantially as it is now. By so doing, they obtain some recompense for the 20 divisions of ground and air personnel which we compel them to retain for the same purpose in Germany.



THE STORY OF AN AIR-SEA RESCUE: Recently a Whitley aircraft of Coastal Command, out on an anti-submarine patrol, developed engine trouble over the sea. A distress signal was sent out, the Whitley hit the water, the dinghy inflated, and the crew climbed in. Only one of the airmen was hurt, and that slightly. Later, another Whitley sighted smoke on the horizon and, after investigation, duly reported the dinghy's position. All night and next morning the dinghy drifted until, eventually, a Sunderland flying-boat landed and picked the crew up. This picture was taken as the dinghy drew up alongside the rescuing aircraft: it well illustrates the immense size of the giant flying-boat. (Note the special paddles used to manœuvre the dinghy, and the yellow skull-caps worn by two of the crew)

ON THE GEORGE CROSS ISLAND

Life in Malta To-day After Uninterrupted Bombing Attacks by Day and by Night by Aircraft from Sicily and Italy

Special Sphere *drawings and sketches*

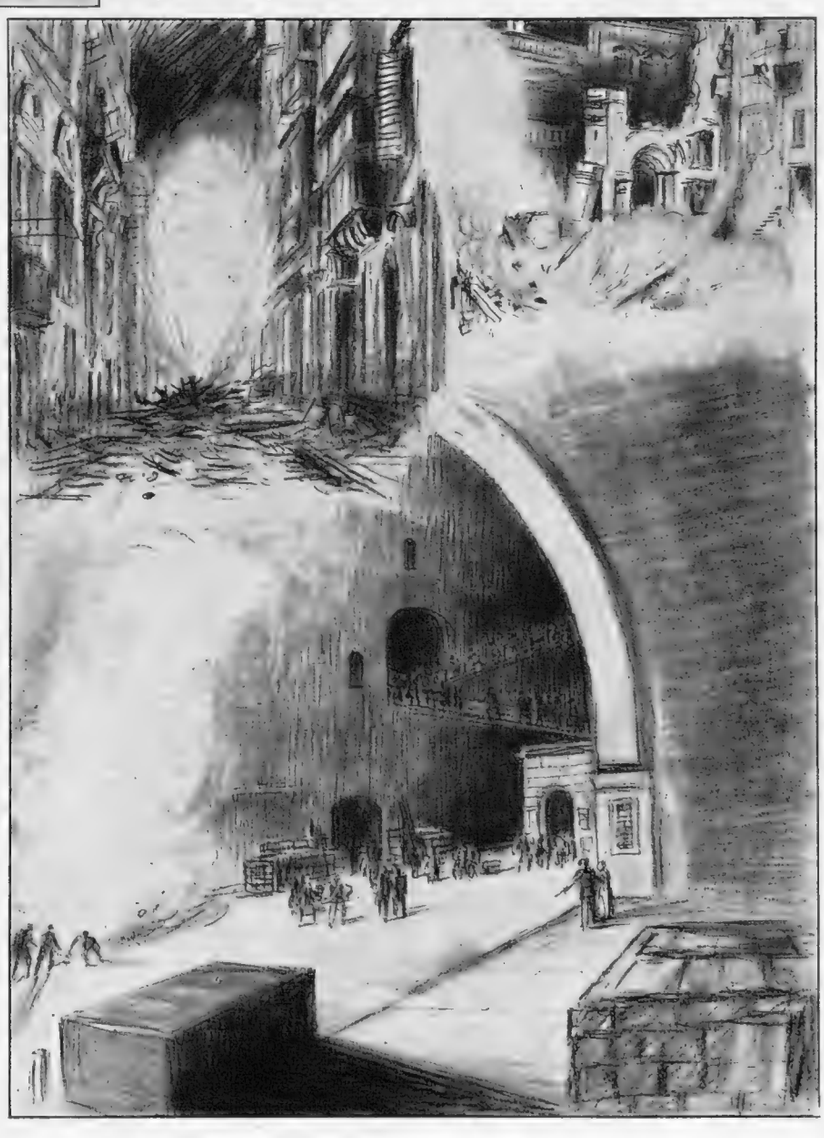
From last December, when the *Luftwaffe* returned to the attack from bases established in Sicily, Malta has endured—with only brief periods of slackened intensity—a succession of raids of continued violence, which made the previous period (as far as the citizens were concerned) seem a time of comparative ease! In April, 250 German bombers would come over in waves during the twenty-four hours: a total of 6,000 tons of bombs were dropped on the Island during this month alone. It was during such intensive raid periods as these that Valetta began to suffer its worst damage. In one month, some 800 houses were bombed, and official, ecclesiastical and civilian property all suffered badly. The Palace of the Governors received several hits, and official receptions and entertainments had perforce to cease; the Banqueting Hall and the famous marble stairway were destroyed (a picture of the latter appears on the following page), and the rest of the building was badly shaken by near-by explosions.

The classic-fronted Church of St. Publius, another well-known sight of Valetta, was severely damaged; but its twin towers still rise above the square beneath which is stored a large part of the Island's grain supply. The circular openings and their caps (shown in the sketch on the left) were always shown to the visitor. The massive pediment of the main frontage was blown away; but the big bell in the left-hand tower still remains. The Opera House, one side of which touched the Strade Reale, Valetta's main thoroughfare, was also badly hit; a huge mass of masonry was blown across the street, but neighbouring property does not appear to have suffered major damage. (A picture of the Opera House also appears on the following page.)

THE NEW GOVERNOR OF MALTA, Lord Gort, V.C., pays a visit to the docks whilst the ships of a newly-arrived convoy are unloaded

Above **(top)—St. Publius Church, Floriana, after the dome had been destroyed: bombs dropped all round it, and people sheltering in the crypt were killed: beneath the square, grain for the Island was stored. St. Publius was famed for its vaults of embalmed monks and skeletons. (Below)—The Royal Opera House (on right) under aerial attack: huge masses of masonry were later piled up in the street.** *On right* **(top, left)—A typical street scene (taken from photographic material) whilst a raid on Malta was in progress. (Top, right) A scene in the Law Court area, where whole buildings were demolished as a result of the air raids. (Bottom) Parties of Maltese entering one of the huge archways leading to the deep shelters cut into the rock. Owing to these wonderful caves, loss of life on the Island was not so heavy as was expected**

AS THE U.S. AIRCRAFT-CARRIER "WASP" APPROACHED MALTA, with aircraft reinforcements which were flown off its deck: Both Admiral Harold Stark, of the U.S. Navy, and Mr. Churchill have now made public the fact that the U.S. carrier *Wasp* played a large part in taking out aircraft to Malta at a moment when the Island's defenders had been wore down to no more than a dozen fighters. "On more than one occasion" we were assisted by the U.S. aircraft-carrier. This picture was taken as the *Wasp* steamed for Malta on one of its trips, delivering aircraft to the embattled British outpost: it shows spotters and signalmen on the Signal Bridge on the alert for messages from the escort vessels and for signs of enemy planes or warships

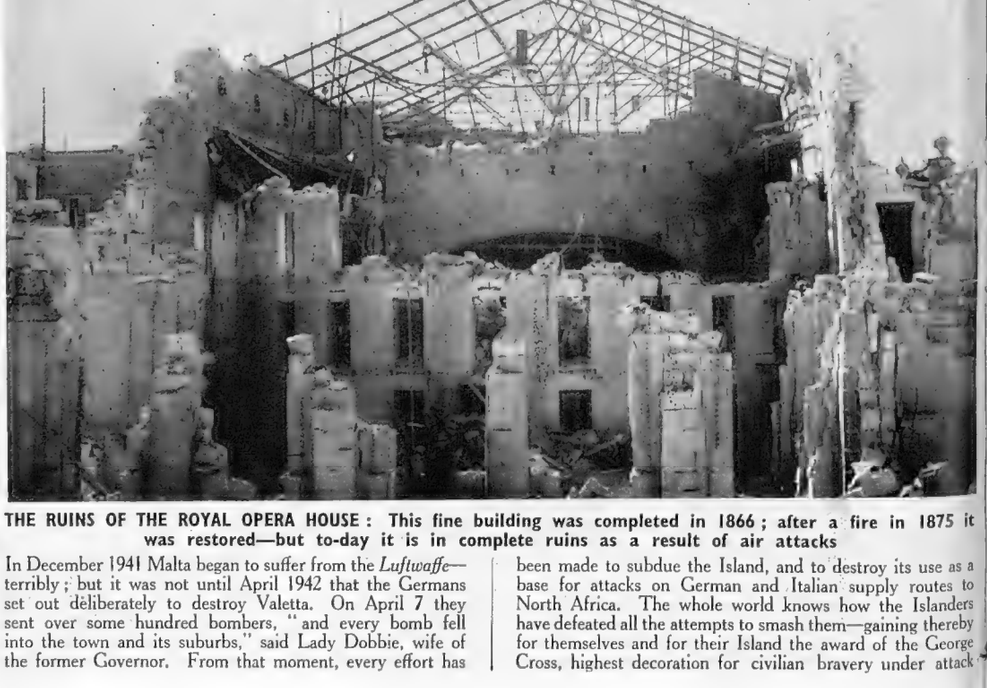


HOW THE BRAVE MALTESE ENDURED THE HUNDREDS OF RAIDS ON THE ISLAND: The women cook a meal for their menfolk in the streets in front of their badly-damaged homes. All about are destroyed buildings and piles of masonry—*Drawing by Edward Osmond*

IN THE HISTORIC GOVERNOR'S PALACE AT VALETTA: The famous shallow marble staircase, now destroyed by German bombs. Most of the art treasures had been removed, but the rain has washed away painted ceilings and irreplaceable frescoes on the walls

On right—**IN THE GRAND HARBOUR AT VALETTA:** Merchantmen, recently arrived in Convoy, being unloaded during an air attack by the Germans—*Drawing by Montague Dawson*

The Convoy has braved the terrors of the sea passage: the next task is to unload the vessels of their precious and urgently-needed cargoes. It is at moments like these that Germans and Italians made their heaviest attacks. Mr. Dawson's drawing has been made from personal knowledge of the Island



THE RUINS OF THE ROYAL OPERA HOUSE: This fine building was completed in 1866; after a fire in 1875 it was restored—but to-day it is in complete ruins as a result of air attacks

In December 1941 Malta began to suffer from the *Luftwaffe*—terribly; but it was not until April 1942 that the Germans set out deliberately to destroy Valetta. On April 7 they sent over some hundred bombers, "and every bomb fell into the town and its suburbs," said Lady Dobbie, wife of the former Governor. From that moment, every effort has been made to subdue the Island, and to destroy its use as a base for attacks on German and Italian supply routes to North Africa. The whole world knows how the Islanders have defeated all the attempts to smash them—gaining thereby for themselves and for their Island the award of the George Cross, highest decoration for civilian bravery under attack

ON THE GEORGE CROSS ISLAND *(continued)*

A FAMILIAR SCENE ON THE ISLAND AFTER A RAID : Salvaged furniture from bombed dwelling-houses stored in the open air. Women and children alike have witnessed the damage to Malta with a heroism unequalled in the Island's previous history. Note the typical Maltese architecture and ornamental ironwork in this picture

AN EPITOME OF COURAGE : Two Maltese children huddle together for mutual comfort in a bedroom in one of the family shelters carved below one hundred feet of solid rock

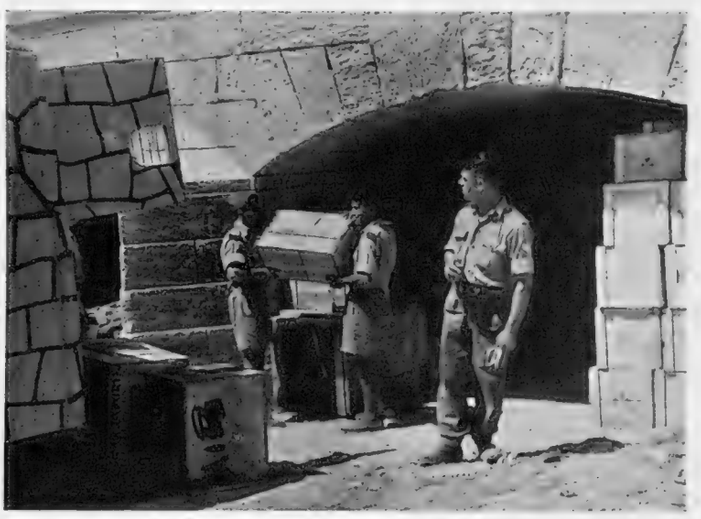
ON THE GEORGE CROSS ISLAND *(cont.)*

After the Malta Convoy had Got Through Safely

A BUSY SCENE AT THE DOCKS, as bombs are unloaded at a lighter point for the R.A.F., after the arrival of the Malta Convoy: It is not so long ago that everyone was thrilled to read of the successful arrival at Malta of a convoy from Gibraltar which had braved the perils of the Western Mediterranean to carry much-needed stores and supplies to the Island. Despite strenuous efforts by the enemy to prevent it, the convoy *did* get through—aided by protection given by the R.A.F. What happened later, after the supplies had reached the Grand Harbour, is shown in the pictures reproduced on this page

SOLDIERS AT VALETTA off-loading food supplies from lighter to lorry for subsequent distribution and dispersal throughout the Island. These supplies were badly needed at the time at Malta

HOW THE STORES ON THE ISLAND ARE DISPERSED to defeat the German bombers: Cases and cartons are placed in shallow excavations and covered with slabs of rock to prevent damage during raids on the Island

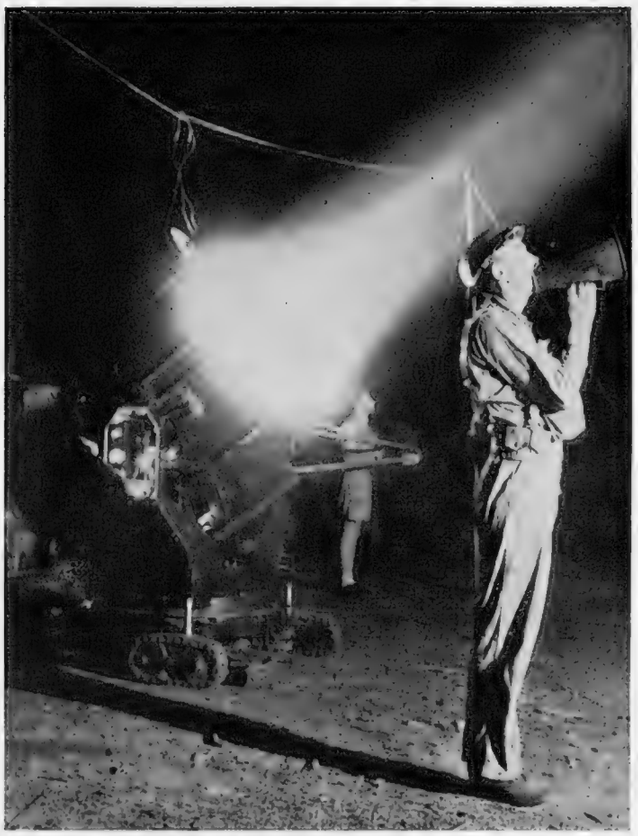


CASES BEING STACKED AWAY IN ROCK SHELTERS FOR SAFETY: The Island is very well provided with storage spaces cut deep into the rock and thus safe from the depredations of the bombers

MALTA REMAINS AN AGGRESSIVE OUTPOST! An R.A.F. Beaufighter is here seen taking off from an Island aerodrome to attack the Italian Fleet

THE GOVERNOR DECORATES THE DEFENDERS OF MALTA FOR GALLANTRY: Pilot-Officer J. H. Bisley, an Australian, receives the D.F.C. for the destruction of five enemy aircraft: At his first public Investiture, Lord Gort, V.C., Governor and C.-in-C., presented medals and decorations for gallantry to a number of Service personnel, including members of the Royal Maltese Artillery, which has so signally distinguished itself in the Island's defence. The Investiture was witnessed by a large crowd of spectators, who cheered each recipient. On the same occasion Lord Gort presented to a Field Battery, whose turn it was to receive it, the historic Lucknow Flag—one of the number which has flown day and night over the famous ruins of the Residency since the Indian Mutiny

SCENES in the DEFENCE of AUSTRALIA

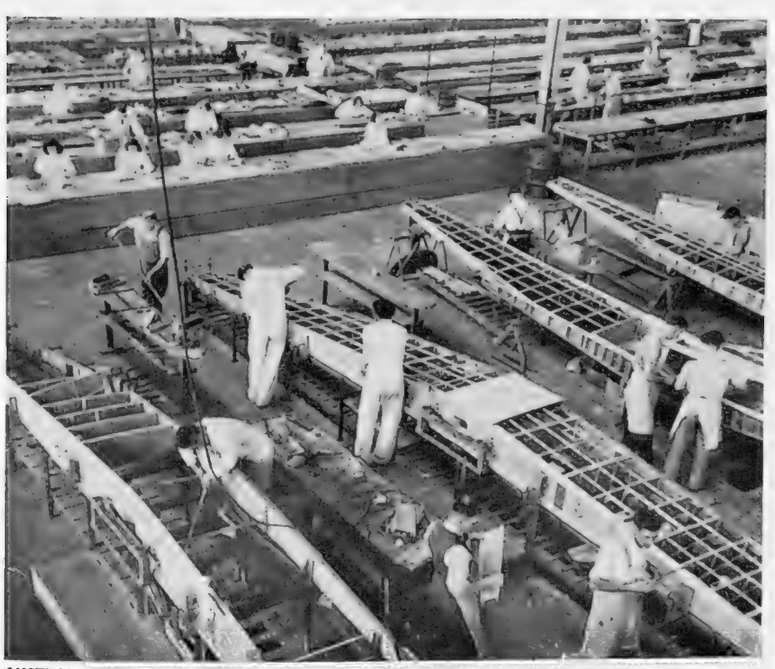


KEEPING A LOOK-OUT FOR SURPRISE NIGHT RAIDERS: A searchlight crew at a strategic point on the Australian coast sweeping the sky with their powerful beams. All posts are now manned

LANDING STORES FOR AUSTRALIAN TROOPS STATIONED AT A LONELY OUTPOST: The supplies are brought ashore through the surf. Lying far out at sea may dimly be discerned some of the vessels engaged in the defence of Australia

OFFICER AND MEN STRIPPED TO THE WAIST: A Pay Parade of Australian troops stationed at Darwin, principal defence point of the north coast, where the menace of Jap invasion is greatest

AUSTRALIAN TROOPS AT DARWIN MANNING ONE OF THE PORT'S GREAT COASTAL DEFENCE GUNS: It has been thought that should the Japs attempt an invasion of the Continent this is the point at which the initial attacks will be made



AUSTRALIA IS PUTTING EVERY OUNCE BEHIND HER WAR PRODUCTION: This picture shows Canadian spruce and Australian plywood being used in the manufacture of wings for Wackett trainer aircraft. The girls in the background are making wing-ribs and setting "brads" to the plywood skin. This Victoria plant produces wings, rudders, and other sub-assemblies in quantity for aircraft used in the training of the R.A.A.F.

AMERICAN TROOPS IN AUSTRALIA, who have brought the Hamburger and the "Wimpy Special" with them—both of which are new (but welcome) to the natives of the Commonwealth!

THE RICH OILFIELDS OF THE CAUCASUS, AND THE PIPE-LINES FROM THE OILFIELDS TO THE CASPIAN AND BLACK SEAS. But this is also the region of the lofty Caucasus Mountains, and the approaches to Tiflis, strategic centre, and Baku, chief oil port, are thus not easy for the German invaders—*A Special* Sphere *map*

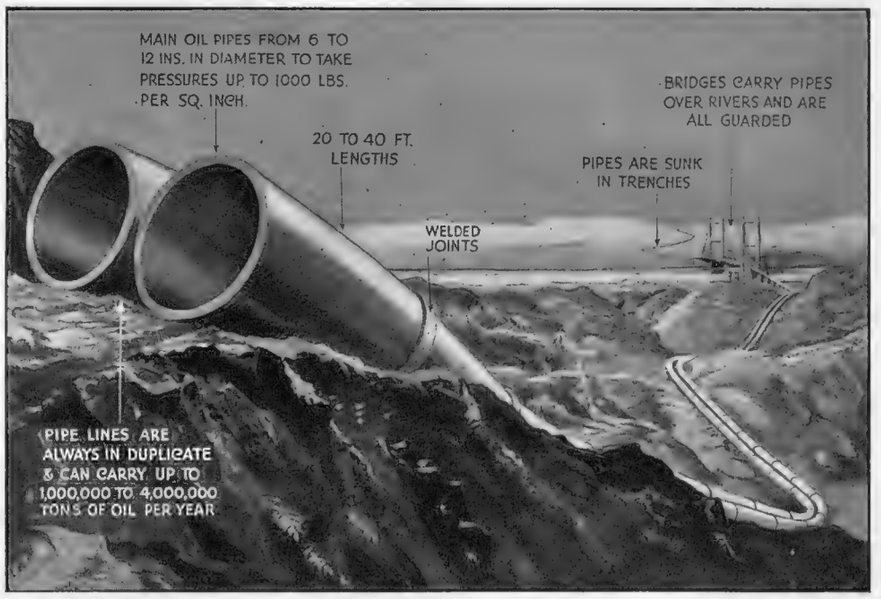
THE NAZIS IN THE CAUCASUS?

The strong German attacks at Rostov, the advance to the south-east of this town and towards the town of Stalingrad on the Volga indicate that Hitler's drive towards the Caucasus is now definitely in process. The ultimate objective of the Germans *may* be Baku: but whether this is so or not, the enemy incursion into this rich oil-bearing region may well be extremely serious for our Soviet ally. Even if the Nazis do not reach the oil port of Baku itself, if they are able to deny to Russia the oil she has hitherto been receiving, the situation will indeed be disastrous. The Baku-Batum region is the biggest oil-refining district in the world, with an annual output of 18,500,000 tons: from the Maikop region comes high-grade aviation spirit; the Grozny fields have been intensively developed of recent years, much of the product going down to Mashash Kala on the Caspian, and then by way of the Volga into the heart of Russia. During the year 1940, it has been estimated that Russia produced 34,000,000 tons of oil, and 90 per cent. of this came from the Caucasus region. It is true that, of late, another oilfield region has been exposed in the Ural-Volga basin; but during 1940 only 2,500,000 tons had been produced—8 per cent. of Russia's needs.

The Germans have been reported to be advancing south-eastwards from Rostov towards Maikop in the Kuban oilfield district. Farther south and farther east (towards Batum and Baku) there are the Caucasus Mountains, a formidable barrier to an invading army—to say nothing of the resistance which would be put up by the Russian Caucasian armies.

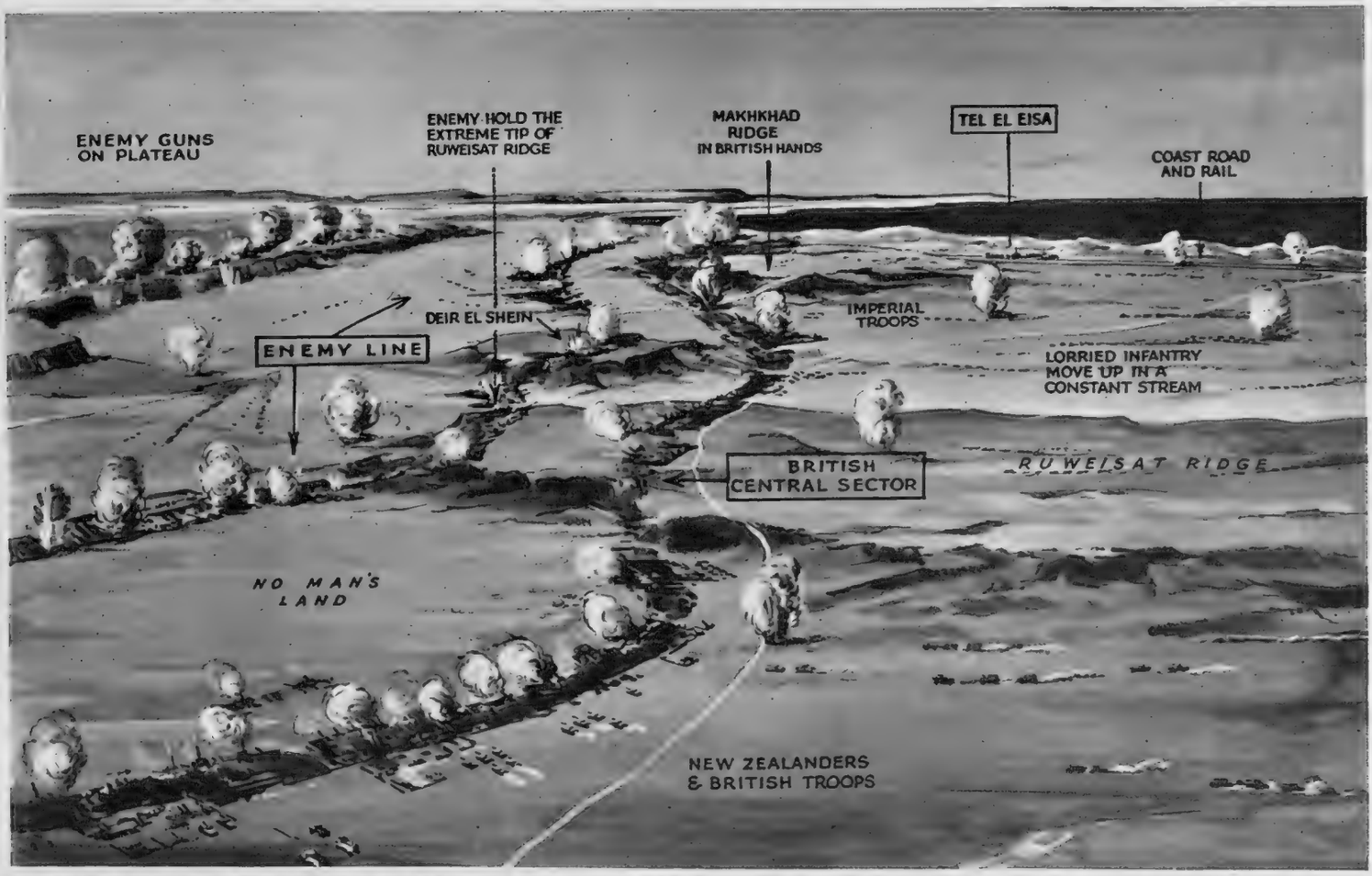
But—in addition to the oilfields—the enemy probably has other objectives in view: the Novorossisk naval base on the Black Sea, where the Soviet fleet are reported to have their headquarters, is probably one of these. They may be also contemplating the control of the Caspian Sea, by an eastwards drive down to Mashash Kala. Established here, their aircraft could well control the shipping routes from Baku northwards to Russia proper.

A study of the special map reproduced on this page will show the importance of the threatened area to Russia and her Allies.



THE MECHANICS OF A PIPE-LINE: It is usually duplicated, and gradients need not be unduly considered—*Drawing by E. G. Lambert*

Oil pipe-lines are costly undertakings, but they can claim many advantages over railway transport in tank waggons. They are immune to a large extent from climatic vicissitudes and fire hazards, and oil can be transported, by day and night throughout the whole year: they do not have to follow a gentle gradient like railways, but can traverse quite rugged country. Pipe-lines on important routes are usually in pairs: the pipes are made in lengths of 20 to 40 ft. and they are now generally united by welding. They usually carry from one to four million tons of oil a year—a duty which would demand the employment of some thousands of 40-ton tank cars on the railway



WHERE ROMMEL BEGAN TO DIG IN TOWARDS THE END OF JULY AND WHERE HE FRUSTRATED GENERAL AUCHINLECK'S OFFENSIVE PLANS : The British and enemy lines across the Ruweisat Ridge and the Deir El Shein position in the centre of the line—*Drawing by E. G. Lambert*

The LINE of BATTLE in EGYPT

A "Sphere" Section Dealing with the Fighting Along the El Alamein Front

—With special drawings and diagrams

After a series of attacks and counter-attacks along a line extending from the sea just north of Tel-el-Eisa station, on the Mersa Matruh railway, down to the Qattara Depression, a more extended attack was made towards the end of last month by General Auchinleck; and there were hotly-contested positions on the Ruweisat and Makhkhad ridges. It should be noted that these are often but slight rises above the general level of the surrounding country, and are not of sufficient elevation to give a decided advantage to the temporary holder. The general narrowness of the line between Tel-el-Eisa and the Qattara Depression is such that both sides have the opportunity of defending themselves in depth. For some time the advantage lay with the British forces, but last week it was made clear that General Auchinleck's forward move, or "general offensive" as it had been described by some, had come to an end. Considerable losses were inflicted on the enemy at some expense to ourselves, but after our initiative had been spent, the enemy launched a series of counter-attacks: the result therefore was that we were soon back at our old line across the Ruweisat Ridge up to Tel-el-Eisa.

ENEMY AIR TACTICS IN THE FIGHTING ALONG THE COASTAL STRIP, a region of salt-water lakes which are a feature of this part of Egypt. The German Stukas come over, out of the sun, and bomb positions along the shores of the lakes, causing a dense cloud of smoke in the process. (See notes at right)—*Drawing by H. P. Burton*

With reference to the drawing reproduced on the left: a correspondent in the battle-zone has described the incident depicted as typical of many taking place in the area close to the sea. Here the line of the protecting shore dunes is backed by a number of lakes which occupy shallow depressions: these usually become full of salt water, which seeps in from the sea. He describes how he was standing on rising ground looking towards the enemy positions to the westward, when he became aware of a number of Stukas approaching out of the sun. They skirted one of these salt lakes, dropping bombs along its further edge, and raising a wall of dust in the process.

The enemy planes were met with heavy gunfire from the seaward positions, and one was promptly brought down at the edge of the lake, blazing furiously. "I watched with my glasses the enemy shells falling round the battery on the other side of the lake. It was a genuine duel between our gunners and theirs. The Australian 25-pounders looked like dragons spitting defiance with fiery tongues."

AIR-BORNE TROOPS IN THE DESERT

The Vital Importance of Using Them Properly in Desert Warfare

IT has been suggested often that General Auchinleck should use air-borne troops for raids behind the German positions; and, conversely, it has been advanced that at any moment the Germans might themselves land in the desert substantial air-borne reinforcements from Crete. But such developments have not, in fact, occurred as yet.

The reason probably is that the desert offers less practicable opportunity for the employment of air-borne troops than any other class of terrain. No trees, clouds, hills or houses are there to provide the invaders with cover during and after landing. Thus they suffer heavy casualties at the hands of our fighters, anti-aircraft guns and ground troops at the beginning of their operation.

As air-borne forces, moreover, they have been trained to take cover immediately on landing, to live on the country as much as possible, and to confine their offensive activities mainly to the cutting of communications, blowing-up of dumps, power-houses and the like, while they have been educated to expect quick reinforcement and regular air-borne supplies. After landing in the desert near our positions, however, they find no cover, nor "country" to live on, and they are immediately presented with the job of fighting, at close quarters, the toughest ground troops in the world.

Therefore the air-borne invaders have just the two alternatives: to fling themselves at our positions and take them at all costs, or to dig themselves in. They cannot retreat, save into a desert that is almost as dangerous as the guns before them. And if they try to dig themselves in—without proper tools—they may at any moment have to face a bayonet and grenade charge from our defenders, who will have had the advantages of artillery preparation and knowledge of the terrain.

It might be suggested that the air-borne forces would not be so foolish as to land right up against our positions. But would they be any better placed if they came down instead out of sight of our positions in the open desert? It is doubtful whether they could exist on their own for more than a few days, and they certainly could not mount an attack against anything worthwhile on our side without all kinds of support equipment necessary in desert warfare—which would be too heavy for transportation by air. As for concentrating on communications and works of various kinds, they would have little opportunity. Desert communications are heavily armed, and are rarely fixed.

Those are some of the explanations why air-borne troops have not been used much, if at all, in Libya and Egypt. Even where, as the reports state, Rommel has been "reinforcing" his forward troops by air landings just behind his front positions, it does not mean he has been able greatly to strengthen himself this way. Imagine such newcomers alighting in the desert without experience of its local peculiarities. On no other terrain has the old hand such a great advantage; and it is unlikely the air-borne people would be capable of operating at once on their own, without courting disaster. The obvious procedure, highly developed by the Germans now thanks to experience with the Italians and other collaborators, would be to incorporate the newcomers in existing units by the method of dilution. The fact does seem to be, however, that Rommel has used his troop-carriers mainly for the bringing forward of specialists. The only way infantry could be used would be by training them under desert conditions in the rear, priming them thoroughly, and then transporting them swiftly by air to a focal point where they could take over easy positions.

D. C.

WELLINGTONS ARE NOW OPERATING IN THE DESERT: This one is warming up on an Egyptian airfield for a forthcoming bombing raid

THE BRITISH BOMBAY TROOP-CARRIER, which has been doing "tremendous work" in the desert by constantly taking supplies and reinforcements of men right up to the front. The Bombay only carries 24 fully-armed men, but it has a range four times greater than that of the Ju.52—*Drawing by W. G. Whitaker*

THE SMOKE-SCREEN in LAND WAR

How Tanks and Infantry Use Artificial Fog in Attack and Defence

THE use of smoke-screens by our tanks in Libya and of large-scale "artificial fog" by the Germans and Russians has been mentioned increasingly by war correspondents. And now from Berlin comes a report of how General Auchinleck attacked with 100 tanks under cover of "artificial fog" in Egypt. The "front-line reporter" said that, after the Germans had taken a position on the El Alamein front, General Auchinleck, "employing a very clever plan," used the fog, which the reporter said was "something I have never seen before—thick, deep and filthy"—as cover for his tanks, which broke into the German positions, overrunning the infantry and penetrating into battery positions.

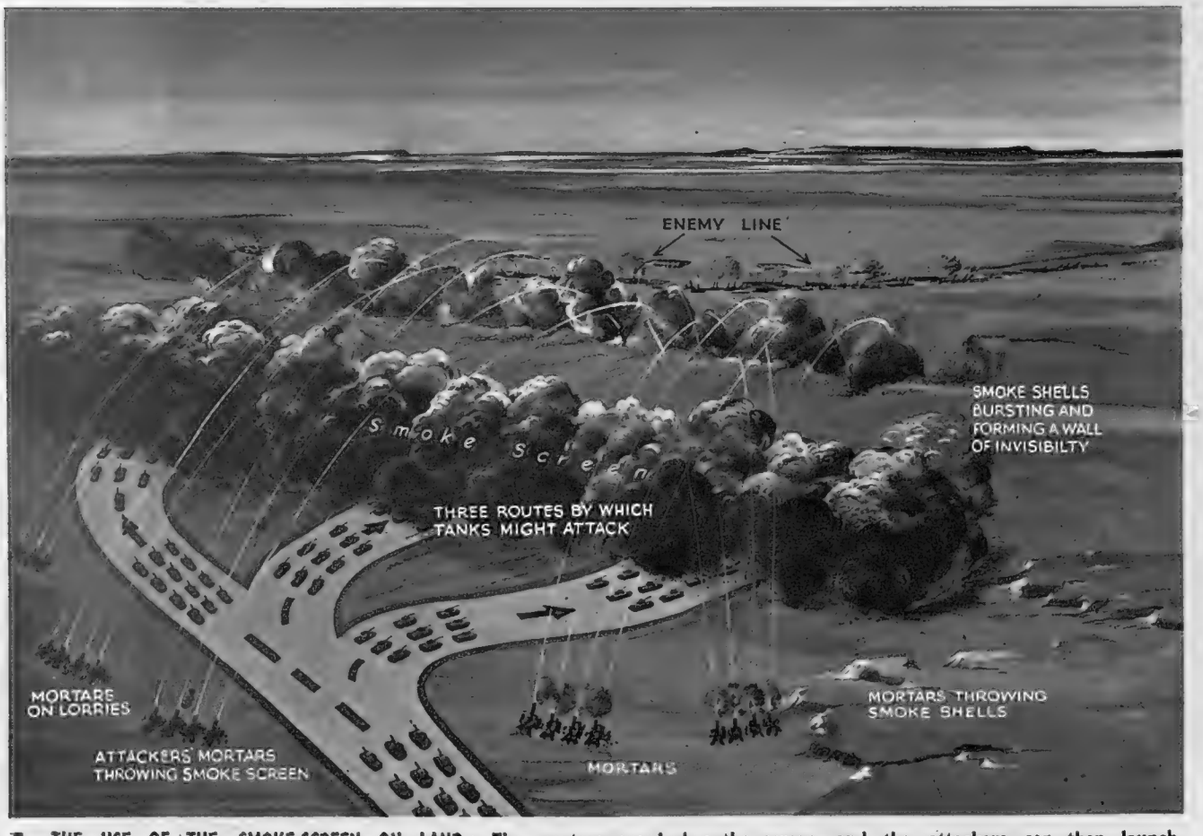
The mechanism is simple. A gun fires a shell of ordinary appearance, and, on bursting, the shell emits the smoke. This is because it has been filled with chemicals such as titanium tetra-chloride and white phosphorus, both of which, when ignited by the small explosion of the shell on impact, produce a vast amount of very finely-divided white solids, a far denser and longer lasting screen than "natural" smoke or fog. Any gun can theoretically be used for a smoke-shell.

But in practice, and especially recent practice, it has been found that many guns are quite unsuitable for the purpose—that is, if smoke is to be employed as a real tactical asset in mobile war. We read in a modern German manual on tank warfare the following dictum: "Guns must be pushed forward if the attack penetrates deeply into the enemy position, in particular for the purpose of blinding anti-tank defence by the use of smoke. For this medium guns are more economical than light." And the German practice on the Russian front has apparently worked out that way. They have been using those wicked guns of the 105-mm. category for putting down smoke-barrages in front of tank attacks as well as for anti-tank purposes.

How do tanks produce their own smoke, and what has been the normal procedure in the Western Desert? For quick, small-scale work it has been found that the best smoke-producing weapon is the light mortar. These are carried in the tanks themselves, especially by infantry tanks used for close-support work, but they are also brought forward on lorries, in armoured cars and on special armoured vehicles with caterpillar tracks, where they are operated by proper mortar crews.

The mortar, of course, is a weapon which lobs a small shell neatly for a short distance on to a chosen, near objective. It is therefore ideal for dropping smoke-shells in a line some few hundred yards away to produce a continuous screen behind which the tanks can deploy for attack or retire in defence, or through which infantry with support tanks can advance against a strong-point.

Both our tanks and Rommel's have had to be extremely careful of smoke as a two-edged weapon. Once those sand- and dust-storms begin to rage there is not much point in laying down smoke-screens, though there have been cases where sand- and dust-storms have been deliberately "thickened" by artificial smoke, and it is possible that the trap set by the Germans for our tanks on unlucky June 13 was one of them.



I. THE USE OF THE SMOKE-SCREEN ON LAND: The mortars are laying the screen, and the attackers can then launch themselves through the wall of smoke from any one of a number of directions—*Drawing by E. G. Lambert*

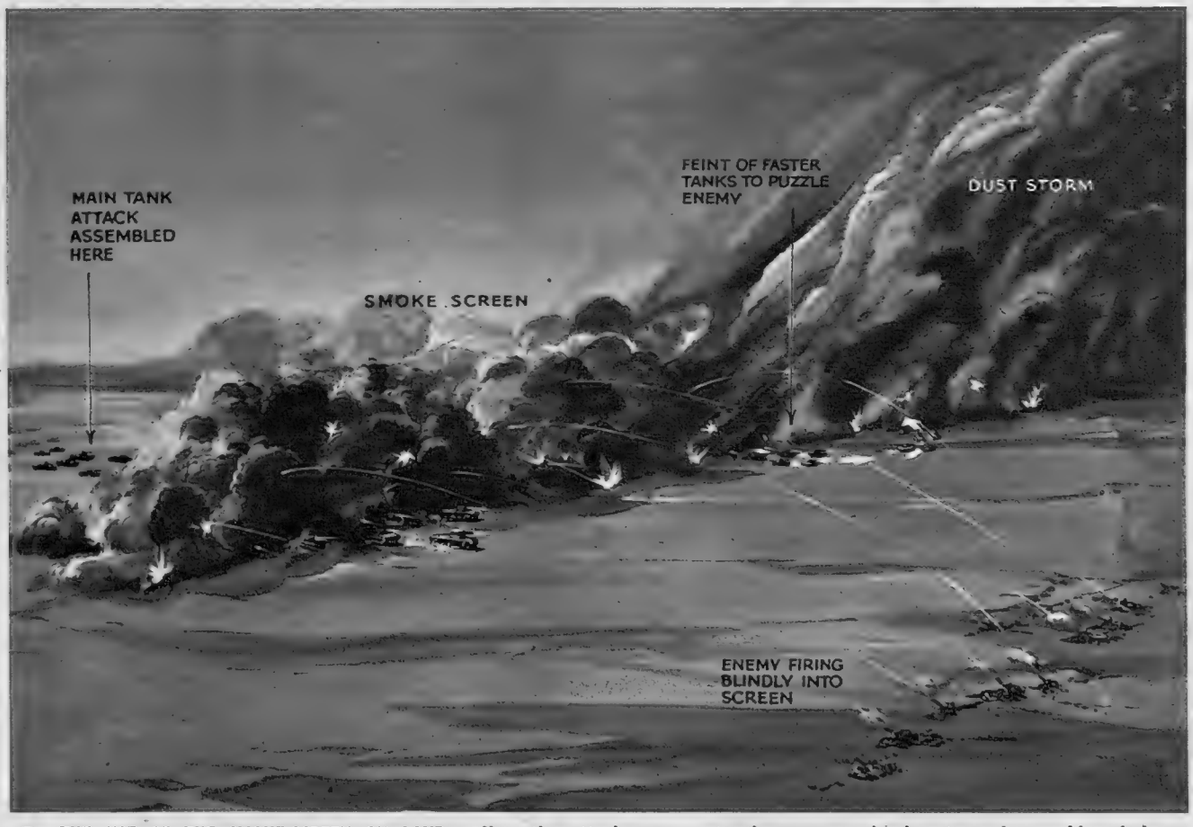
GERMAN TROOPS LANDING IN THE DESERT FROM JUNKERS 52 TRANSPORT-AIRCRAFT: It has been reported by correspondents in Egypt that Rommel has been bringing up reinforcements by this means—in small batches by troop-carrying planes, averaging 50 men per load (see notes at left)—*Drawing by Roland Davies*

A point worth making is that smoke acts best when generated some distance from the tanks or men or guns to be screened. Generated immediately around them it merely reveals their exact position to the enemy artillery. So the most common tactic is for the mortars, either from the tanks or from special mortar detachments, to throw a drifting wall of smoke towards the enemy, if possible with the wind, and then to attack round the enemy's flank behind the wind and the smoke.

Screens are also valuable for masking the positions of batteries, particularly batteries of anti-tank guns that are apt to reveal themselves dangerously by the bright flash of their high-velocity guns.

The employment of aircraft to lay smoke-screens has often been discussed, and has been attempted. Eventually, it may become the best method. Swift, low-flying machines of the dive-bomber type either drop neat sticks of smoke-bombs, or emit clouds of smoke from nozzles with the same technique as that used in sky-writing. The method could be used to spread a protective screen round para-troops just landed. The question of monster smoke-clouds to protect towns and cities, and to mask the advance of bombers high in the air, is beyond the scope of this article, which can be ended aptly with a quotation from Ludendorff's *War Memories* that puts the subject finally in perspective:

"The Divisions in line (August 8, 1918) allowed themselves to be completely overwhelmed. Divisional staffs were surprised in their headquarters by enemy tanks. . . . Mass attacks by tanks and artificial fog remained hereafter our most dangerous enemies."



2.—THE USE OF THE SMOKE-SCREEN ON LAND: How the attack appears to the enemy, who has to make up his mind very quickly as to which of the many thrusts is the real one!—*Drawing by E. G. Lambert* (See *accompanying notes*)

As the successful employment of smoke-screens depends very largely on local conditions, it might be as well to add a note on the weather in Egypt and Libya.

In the Libyan Desert, the *Khamsin* period ends usually about the beginning of June, and then the regular summer weather sets in. A dead calm morning until about 9 a.m., when the N.N.W. wind comes in from the sea, and blows all day until sunset, when it drops to a windless night. This wind varies in strength—most days it may be termed a stiff breeze, but occasionally it will blow for three days at almost half-gale force, and this, with the sandy conditions around Alamein, would be sufficient to raise the sand and cause a dust-storm, which would create unsatisfactory visibility for both land and air work.

The scurrying dust blowing across the face of a desert aerodrome makes landing very risky, as it is quite impossible from the air to determine where the actual surface is within 15 ft. or so.

Summer dust-storms in Libya do not depend entirely on the force of the wind, but also to a certain extent on the barometric pressure of the air. On some days a fairly strong blow will not disturb the dust to the slightest degree; on others a quite light breeze will send it spiralling across the desert.

The general direction of the wind varies little, as it is usually N.N.W., but on some days may shift a few points to due north and occasionally to N.N.E. The use of smoke-screens by both ourselves and the enemy would be dictated by this wind, and its use would be simplified in some ways, as an attack could be planned two or three days ahead with the practical certainty that the wind would be in a northerly direction. At the same time it would be impossible to employ smoke if a force were attacking from the south northwards.

CRUISER TANKS USED BY OUR SOLDIERS IN EGYPT AS A BAIT FOR THE ENEMY: The Germans run on to a line of concealed "General Grants" during the fighting on the Ruweisat Ridge: only the turrets of the "Grants" showed above the ridge—*Drawing by E. Byatt*

The element of surprise is not peculiar to the Germans alone. During the fighting at Ruweisat German panzer formations came into the attack in the face of very heavy anti-tank fire from our batteries. And then some of our cruiser tanks went out to meet the advancing panzers. The cruisers looked tempting, and the enemy tank crews fell into the trap! They came rolling on until they were right in the line of fire from big American "General Grants" which waited hull down behind the ridge. The "Grants" opened up with their 75-mm. guns. The panzers staggered under the shock and a few burst into flames from direct hits from the first broadsides. The German tank gunners fought back gamely, but they were at a big disadvantage, as the "Grants" could see them, and all they could see of the "Grants" were turret tops showing above the ridge. A tank lieutenant who went in with the cruisers, and was wounded in the neck, said: "There was never any doubt of the result from the moment the 'Grants' opened fire. The enemy certainly suffered heavily." The fight was still going on when darkness fell. Then, soon after 9 o'clock, German flares began rising in the sky behind the enemy's lines. It was the tank commanders calling their broken panzers home

TANKS AND FIGHTER-BOMBER IN EGYPT

THE FIGHTER-BOMBER AT WORK, attacking German tanks with bombs and cannon-guns during the desert fighting—*Drawing by Roland Davies*

During Rommel's heavy and sustained efforts to reduce the salients which had been driven into his line along the Alamein front, fighter-bombers put in the highest number of sorties for that type of aircraft ever recorded. The present campaign has, in fact, repeatedly reaffirmed the great utility of the fighter-bomber, and they are gradually taking on importance in bombing tanks, five of which (including three heavy Mark III.s) were totally destroyed on one occasion and another severely damaged. There is no recorded instance of German Stukas ever having put out of action any of our tanks in the Western Desert. "In addition to tanks, hordes of transport vehicles which necessarily accompany them into action received a very severe handling," declares "The Times." "Large numbers of them were blown to pieces by accurately placed bombs dropped from a low level." The great advantage of the fighter-bomber is that after dropping its bomb the aircraft then carries out the second part of its role and goes down with machine-guns and cannon blazing to finish off the destruction and disorder

THE "SCIENCE" OF ASTROLOGY AND ITS APPLICATION TO THE WAR

The Newspaper Astrologer has been Active for a Number of Years; but Since the Outbreak of War his Activities have Increased in all Manner of Fantastic Ways. The Following Article is the Result of an Enquiry into Certain Objectionable Manifestations of the New "Science"

By CHARLES GRAVES

QUESTIONS in the House of Commons and letters to *The Times* are the outward and visible signs of a growing feeling among the more intelligent sections of the public that astrology, and particularly newspaper astrology, has started to create a definitely retarding effect on the war effort. For various reasons there was not a single newspaper astrologer in the country who prophesied that there would be war between us and Germany in 1939. On the contrary, they brayed the exact opposite. When war broke out they changed their tune, if it could be called a tune, and did their best to pretend that various asinine remarks which they had made in the past were the closest they had dared to go in their warning about approaching Armageddon. One astrologer was so bold as to say that editorial policy had definitely prevented him from being a prophet of woe.

This craze for fortune-telling and astrology has always been with us, but in a very minor form. A few cheap magazines have regarded it for a long time as a useful circulation raiser. Then in the race for the 1,000,000 mark, the 2,000,000 mark and more, the great national newspapers, both dailies and Sundays, snapped up any soothsayers in the market.

I speak under correction, but I rather think that these newspaper astrologers originally concentrated on birth dates and prognostications of individual readers' futures. But after the war began they took unto themselves the uninvited job of making general predictions about the future course of the war. Sometimes, they made generalisations about the obvious fact that this would be a war of sea communications, and that islands would be of great importance. Sometimes, they made platitudinous remarks about the prospects of the various countries lining up against the Axis. It is hard to find, however, any suggestions that Russia would join us against Germany, or rather that Germany would attack Russia.

Primarily, it is these general prophecies which are the subject of my criticism. Certain astrologers in the past nine months have indicated that there would be no more mass raids on this country. Nearly all of them predicted that something terrible was going to happen to Hitler in May and June this year, with the result that actual hostilities were sure to be over by August or September, when mopping-up operations would be in progress.

One of the leading newspaper astrologers went so far as to say that China was the country which would prove most dangerous to us, and that she would absorb Japan in no time at all.

These generalisations by newspaper astrologers undoubtedly are the cause of the majority of wishful thinking in this country. Astrologers who announce that people in the British Isles need have no more fears of invasion or other hostile action automatically encourage factory workers to slacken their war effort. I have one particular astrologer in mind. He writes in a periodical, and quoted almost every constellation in the sky as proof positive, a few weeks ago, that the war would be over within a few weeks. Time marches on and, as I write, peace seems to have receded over the horizon. This does not, however, seem to worry this star-gazer in the least. He takes for granted that his fans will forget any prophecy which does not become true, and will always lap up further prophecies of the immediate demise of Hitler and Co. It is the simplest formula in the world—"the wish is father to the thought."

I now come to birthday predictions. This is unquestionably the lesser of two evils. Air crews in the R.A.F. seldom read the newspapers except to see what Jane is doing in the *Daily Mirror*. Officers and men in the Royal Navy are so much at sea that newspapers have little attraction for them when they return. I have no knowledge of the Commandos' attitude towards the daily Press, but it would not be surprising if they, too, read the newspapers as seldom as they listen to the B.B.C. The direct effect, therefore, of a newspaper astrologer saying that people born between July 21 and August 21 are recommended to take plenty of care in the choice of their activities, with good results promised if they keep to familiar ground, but with a danger of resentment provocative of disputes if they are not careful, is negligible.

There may, however, be an indirect effect. Relatives of men in the armed Services will probably look to see the birthday predictions, and, in the case of Sunday newspapers, will probably write and warn the said relatives to be careful on individual days. These warnings will probably be laughed off. At the same time, I think that the Royal Air Force is becoming more superstitious than it was at the outbreak of war, and anyone who knows anything about air fighting as it is to-day realises that split-second decisions may mean the difference between life and death, and the slightest mental reaction caused by some would-be friendly advice about avoiding or taking risks can cause disaster.

Germany was full of astrologers on the outbreak of war. It is a curious fact that all public astrologers were banned as from May 10, 1941, the night when Hess arrived in this country on his misguided mission. In my opinion, a wonderful opportunity was missed by our Political Warfare Executive. It would have been so easy to point out to the Germans on the radio and by leaflets that the reason for this was that Hitler did not know which way the war was likely to develop.

In the meantime, a suggestion made to the Ministry of Information that newspaper astrologers should be banned did not meet, I understand, with any success. It is possible that even if the Newspaper Proprietors' Association decided to ban all astrologers in the columns of the newspapers which they controlled, Doctor Goebbels might take advantage of this and tell the Germans exactly what we had every right to tell the Germans—that the astrologers realised what was coming to them. I have just referred to the night of May 10 when Hess's arrival coincided with the most vicious aerial onslaught that London has experienced so far. Personally, I found it most uncomfortable. But my reactions were pleasurably affected later on by the knowledge of what happened to a group of astrologers. These star-gazing experts were convinced that something exceedingly dramatic was going to happen on May 10. They were right so far. They were so impressed, in fact, that they decided to keep vigil all night in a house off Regent's Park. Again, they were right. The building received a direct hit. . . .

Astrologers will always tell you that astrology is as much a science as astronomy; that Greenwich Observatory was built according to the directions of the leading astrologer of the day. But if you think it worth while to put them in a false position, it is only necessary to ask them what they think about Pluto. Pluto, it seems, was only discovered in recent years, and the most fanatical astrologer cannot pretend that he and his colleagues know anything about it.

As for birthday predictions which appear in newspapers, I believe that they are all based on Greenwich. This in itself is farcical. For if it is true that astrologers need to know the exact moment of birth of any given person within a quarter of an hour and a quarter of a mile, the whole thing becomes fantastic.

While on this point, we come to the question of circulation-raising. The daily newspaper with the biggest circulation in the world is the *Daily Express*. And yet the editor has set himself strictly against any intrusion of astrology into his columns. The sister newspaper, the *Sunday Express*, had an astrologer on the outbreak of war, dropped him later on, reinstated him, and has dropped him again. The circulation of the *Sunday Express* continues to rise.

Mr. R. H. Naylor (the astrologer in question) can be found, however, in a monthly publication devoted to "palmistry, astrology, and the occult sciences." The August issue contains articles entitled "Is Hitler Possessed?" "Superstitions of the Orient," "Dreams that Trap Murderers," "England at War and After." Mr. Naylor himself tells you all about your fortune in August. The Prime Minister and I (he is twenty-five years and one day older than I am) are promised complete orientation of things as they now are. Such a change may turn out extremely well, Mr. Churchill and I are assured, though at the time it will cause much conflict of opinion. It is nice for us both to know, however, that it will more probably affect home life than business interests. "Do not read into the above an intimation that domestic luck will be out. On the contrary, someone in the family will be doing very nicely, thank you!" says Mr. Naylor. Could this possibly refer to Vic Oliver? Probably it does, as Mr. Naylor continues "Joint family: financial interests will certainly improve considerably." Mr. Churchill (and I) are further warned to handle nothing to do with land during August if we held such. The added warning is given—"Your expenses will be rather higher temporarily." Can this be a reference to the Second Front?

P.S. My favourite story about fortune-telling concerns Marlene Dietrich. In 1938 she had started to take an interest in this, and paid for a day-by-day chart sent to her in Hollywood by a soothsayer in Paris. While I was in Beverley Hills, the soothsayer wrote and suggested that if Miss Dietrich cared to pay for his passage, and guaranteed him so many thousand dollars a year, he would provide her with an even better service. Miss Dietrich's common sense reasserted itself. Her reply (in effect) was that if the soothsayer's stars could not foretell to him that she hadn't the slightest intention of doing anything so silly, he could not be much good at his job. She promptly discontinued the mail-order prophecies as well.

THE FIRST SERVICE TO BE HELD IN THE "BOW BELLS" CHURCH IN CHEAPSIDE (St. Mary-le-Bow), since it was badly damaged in the 1940 air raids, was held in the ruins by the Cordwainer Club a few days ago. The service was conducted by the Rev. S. J. Marriott, Canon of Westminster: and, above, it is seen in progress

A MOATED MANOR FOR THE NATION: Great Chalfield Manor, near Melksham, in Wiltshire, which is being taken over by the National Trust

THE GREAT HALL AT CHALFIELD MANOR: The house was reconditioned by its owner from detailed drawings by Pugin: Lord Zetland has just announced—at the annual meeting of the National Trust—that arrangements have now practically been completed whereby Major R. F. Fuller will make over to the Trust his home, Great Chalfield Manor, in Wiltshire, a large part of its furnishings and its gardens, with an endowment for its upkeep. The house stands in open country near Melksham; it is a moated manor dating from the last quarter of the fifteenth century

FOUR MEN BUILD A BRIDGE IN THEIR SPARE TIME: In a working time of seven Sundays, four miners of Morpeth (Messrs. Wood, Jameson, Shaw and Gibson) have built a 120-ft. span across the River Wansbeck, at Quarry Woods, a bungalow village near Morpeth, to replace a previous span carried away in a winter storm. "Miners' Bridge" is a short cut to the pits: here is the bridge, and the four miners who repaired it, carrying planks of timber used in its reconstruction

MEMORIES OF FIFTY YEARS—

An Experiment in Autobiography—XVI (Conclusion) By J. G.

THE BEST OF LIVING.—No doubt at all, liking is a better subject for an essay than hating. It is also a more difficult. Any fool can catalogue his hates. It is not so easy to pick out the chief joys and blessings in a man's life. They are material and earthy, or they are spiritual and derived from imagination, or they are made up of both kinds. It is no easy matter to decide whether life offers more to people possessed of a vivid imagination or to those who derive their interest from material capital.

The "pleasures of the mind" must not, of course, be restricted to the imaginative, but the supreme joys of a lively imagination are unknown to the materially-minded. Yet not every man endowed with vivid, introspective, reflective imagination, looking back on his life, counts the gift a good fairy's gift. It depends on many factors, and, chief among them, on his bodily health and on the times in which he lived.

I can conceive that a man of imagination who enjoyed good health all his life, and lived out that life in times of piping peace and security, could have counted himself fortunate and rich beyond estimation. This happy conjunction is rare. Physical fitness and a vivid imagination do not usually go hand in hand, and the uses of imagination often decline during periods of physical robustness. And certain it is that men who have passed much of the active part of their lives in times of insecurity, anxiety and warfare are not always grateful for the fairy's gift of imagination. They could have done without it, they judge in retrospection; it brought them more pain and care than pleasure and consolation.

The nature of the gift varies, too. It may be healthy and hopeful and confident as well as reflective and vivid; or again, it may be morbid, pessimistic, foreboding ill, acutely sensitive to human tragedy, such as was the gift bestowed on W. H. Hudson and perhaps on Thomas Hardy.

Indeed, the two extremes are well illustrated in the last name. The two most famous Thomas Hardys of Dorset may well stand as the two poles of the human mind, the one acutely sensitive and even morbid, the other serenely material and admirably commonplace, efficient and orderly.

Who shall say whether the Captain of the *Victory* or the author of *Tess* drew from life's lucky bag the biggest prizes and the sharpest thorns? I know just enough about the private lives of both of them to catalogue roughly and to contrast their sorrows and thorns and to guess at their prizes and, allowing for the difference in the times they lived in, I doubt not at all that the sailor had the best of it—but, then, his nature well fitted his times; he might well have found existence a drab and dreary business if he had passed his Service days in the Victorian era.

A Catalogue of Blessings.—I was endowed with a very vivid, and indeed a very apprehensive, imagination, and two world wars of unparalleled ferocity cut into and fell across my active life. It is small wonder if I and men of my age and type hesitate before we "thank Heaven, fasting" for that gift of acute imagination. But we should be ungrateful indeed if we failed to acknowledge the credit side, while we underline items on the debit.

In my catalogue of life's blessings, books, and the reading and writing of them, stand first. Of that enchanted garden imagination opens a hundred locked gates, reveals a thousand glades and vistas to the mind's eyes. The same golden key can open for the imaginative enchanted gardens in the realms of drama, music, painting.

I can never support a yard-stick measurement of taste. I despise arbiters of good taste and intellectual snobs as among the greatest of all snobs (and of all moral cowards). It is the experience that counts, not the motive force which sets the experience moving. Whether it be the Barcarolle from *Hoffmann* or the 5th Symphony which first awakes that burning minute of discovery and experience, whether it be a water-colour by an amateur or Rembrandt's "Night Watch," whether it be Barrie's *Quality Street* or Shakespeare's *Hamlet*, the adventure is the thing; the experience is all, the cause of it very little. To despise the experience because you despise the cause is the clearest proof of the small and muddled mind.

High in my list of life's blessings and joys I put the English country scene, in summer and winter, English country life, with an unexplained emphasis on the daily round of habitual tasks. It may be that the repetition of trivial daily chores gives us that sense of permanence for which we always crave. I know that I have derived constant comfort from the doing of such repetitive duties and have found in them lasting pleasure.

And "working with one's hands the thing that is good"—that is the craftsman's supreme blessing. Every work that his hands turn out gives him joy and interest in the doing and pride and satisfaction in the achievement. But for the amateur, also, the "Heath Robinson," the interest and satisfaction are factors not to be despised. Once more it is the experience, not the cause, which counts.

High, too, in the list come the Highlands of Scotland, their light and air, their waters and hills, their colour and romance, and the people who live in them. Who shall estimate, who passionately loves the Highlands, the value of that annual experience when he tastes again the scents and scenes around him when his train draws in to Kingussie; or when the shadows of his first evening fall longer across the Firth and the Black Isle?

Far lower down the list I set foreign travel, country-house visits, intelligent conversation, games, and even gardening, but all my life I have set the highest value and derived the keenest delight from intercourse with those rare spirits, the great men and great ladies of all classes, whose manners are shaped by simplicity and sympathy. How rare they are, how unbounded my debt to them, my admiration for them!

Envoi to Fifty Years.—My experiment in autobiography is finished. In my considered opinion, my life hitherto has been more successful than I deserved, and as happy as I deserved, having regard to the handicaps of Nature and of world wars. (I consider, too, that my life has been more successful and happy than has been my experimental effort to describe it.) I subscribe to the belief in a Divinity that shapes our ends. Without the divine presence and direction of some guardian angel, I cannot believe my "rough-hewing" could have led me anywhere but to a madhouse or to a gaol. Memory teems with instances of bad judgment, hasty judgment, muddled thinking, surrenders, lack of faith, loss of hope, auspicious beginnings and weak abandonments, follies, frailties and incredible rescues from the penalties of folly and weakness. I have had many happy years, and have enjoyed my work. I thank with brief thanksgiving whatever gods may be.

THE END

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this publication should not be taken as an indication that they are necessarily available for export

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H.M. Queen Mary has again graciously given her "Be Good and Do Good" prizes to a boy and girl in each of the Society's branches who have best lived up to her motto. These prizes are always eagerly vied for and treasured by the recipients. The Society much values this long-favoured, gracious act. Headquarters address: 164, Shaftesbury Avenue, London, W.C.2.

LOGGING in the HIGHLANDS

Canadian Lumberjacks at Work in the Forests of Scotland

Vast quantities of timber of all descriptions are needed in wartime—for use in the Services and for essential construction work in industry. All this takes up valuable shipping space: owing to the efforts of the Canadian Forestry Corps now at work in these islands, however, the space required is cut down to a minimum, as wherever possible home-grown timber is being felled to reduce the demands on our hard-pressed merchant fleets. The skilled, hardy men of the Forestry Corps come from all parts of the Canadian Dominion: all are duly-trained soldiers, too. In the beautiful Highlands of Scotland they have established logging camps and sawmills, and they are now engaged in converting into logs and planks the forests which are Scotland's pride. The pictures reproduced on this page were all taken on the shores of Loch Ness, famous in pre-war days for its much-publicised "Monster"

IN THE HEART OF BEAUTIFUL HIGHLAND SCENERY: A tractor with a "Sulky" in tow bringing felled trees from the forest to the mill

ON THE SHORES OF LOCH NESS: Two men of the Canadian Forestry Corps using a hand-saw to cut up logs after felling

A WHOLE AREA OF FOREST LAND sloping down to the shore of the loch has already been cleared of standing timber at this spot

"HIGH LEAD" LOGGING, with a special Canadian-built tractor to haul the heavy logs away to the mill as soon as they have been felled

THE LOGS ARE PILED UP ON A STAGING overlooking the loch ready for transportation. Note the cleared areas of forest land in the background

The World of Books—By Vernon Fane

CRIME, COURAGE AND CORRESPONDENCE

Two Thrillers and Mr. Howard Haycraft's Analysis of Crime-Story Writing; Mr. Neil Bell's Meek Peek; The Obituaries of a Soldier; Sir Ian Hamilton's Charming Memoir of His Wife

THIS week I have read two widely-different "who-dunits"—a portmanteau name for a novel of crime and detection—and although neither of them had the chills and thrills one most appreciates in such fictions, one of them had considerable entertainment value, of a sombre kind.

REQUIEM FOR ROBERT (Michael Joseph. 8s. 6d.), while not as liturgical as its name suggests, is a fairly sober piece of work, brightened by the activities of two or three reasonable and likeable characters. I am not particularly a devotee of that type of detective-story in which an amiable, and usually excessively well-bred young man conceals Holmes-like powers of deduction under a facetious manner, but I think that most readers would agree with me that there is a place in any book of this kind for at least one solid and congenial character.

This is a secret that Siménon has, perhaps, better than any contemporary writer, and with his Inspector Maigret as a comfortable (and comforting) focal point, no amount of emphasis on dingy canal sides and shabby lean-to's can depress the reader's spirits or affect his interest. The odd thing about murder-stories—and the reports of actual murder trials, for that matter—is that people, or, rather, a proportion of people, enjoy reading them. Those who don't enjoy, don't read. And that is not to say that all those who read are third-generation ghouls.

Often they are absorbed in the intricacies of the evidence, in the routine of detection and in the steady, undramatic progress of an agency known as The Law. They probably kindle to the shot and the scream in the night, as I must admit I do, but they can be allowed an academic interest in the processes which follow those.

With very few exceptions these readers need relief in the course of their grisly reading. It need not, as I have tried to point out, be comic relief, but just some alleviation of the general horror. In the most sordid of murder cases, this is often provided by a scared or scatter-brained witness. In books it has to be provided by the author's ingenuity, and when this is absent the story suffers.

Requiem for Robert—to cut short this digression—is a novel by an author who has fully realised her responsibilities in this direction, and it has the added advantage of a well-constructed plot and a very credible final exposition. Miss Mary Fitt is a writer to follow, particularly now, when such gifts seem rarer than ever, and are all the more to be appreciated for that.

A MILE OF BOOKS FOR PAPER SALVAGE: Among the many novel ideas for the collection of salvage, Kingston-on-Thames has included one for "a mile of books" through the main street. Old school exercise books, novels and works of all description have been contributed towards this end. A Polish member of the First Aid Nursing Yeomanry is here adding her quota to the collection

The current product of G. D. H. and M. Cole's pens is disappointing. Even if one accepts the modern convention that a murder mystery is not meant to be exciting, except in so far as it exercises the powers of deduction, it is still rather a dull book. The setting, a lonely country house, misses the forbidding and lands squarely in the squalid. The characters are unprepossessing, and the crimes are as justifiable and as passionless as the killing of flies.

TOPER'S END (The Crime Club. 8s. 6d.) is long and solid and fair, in the sense that the authors never cheat on a clue, and are a considerable distance above red herrings, but, from time to time, as I laid it down to reflect on it and on other matters, I was conscious of a faint nostalgia for the Mary Roberts Rhinehart school of thought, which kept the reader too busy switching on full lights and quelling spine shivers ever to worry about the fact that that step on the staircase in chapter three had never really been explained in the last chapter of all.

And then there is Mr. Howard Haycraft's interesting study, MURDER FOR PLEASURE (Peter Davies. 10s. 6d.), in which the whole science of such writing is analysed, and "The Life and Times of the Detective Story" thoroughly explored.

An interesting footnote on the American author of this very welcome work is that he is the writer of that excellent little booklet which is handed to all the American troops embarking for England. I have seen a copy of this, and could almost wish that it had an English as well as an American circulation, so friendly and sensible and comprehensive is it.

In the book under consideration, however, Mr. Haycraft's field is more restricted, though no less exhaustively covered. I particularly enjoyed his dictum on that favourite of novels, *Before the Fact*, in which the murderee is progressively convinced of the murderer's intentions, though with a rabbit-and-mongoose inability to do anything that might protect herself.

Mr. Haycraft writes: "It is this convincing insistence on the *normality* of murder that transforms the Iles stories into something apart, which gives them their horrid, particular fascination and brings them close to the true 'melodrama of the soul.' Not many 'serious' novelists of the present era, in fact, have produced character studies to compare with Iles's internally-terrifying portrait of the murderer in *Before the Fact* (1932), his masterpiece, and a work truly deserving the appellations of 'unique' and 'beyond price.'"

In other words, if you can find a second-hand copy of this somewhere, get it and read it right away.

I recommend to you Mr. Haycraft's selection for a detective-story bookshelf, which pays more than adequate tribute to the English and to the French writers in this field. You may want to quarrel, as I did, with some of his omissions—why not, for instance, *The Mystery of a Hansom Cab*—but you will hardly cavil at any of his choices, which cover such classics as *The Moonstone*, ten volumes of Conan Doyle, A. E. W. Mason's *At the Villa Rose*, Bentley's *Trent's Last Case*, Milne's *The Red House Mystery* (yes, A. A. Milne), Edgar Wallace's *The Mind of Mr. J. G. Reeder*, and Siménon's *The Patience of Maigret*.

These do not make up even a tenth of the selection, but you must buy this book to find the others, and to agree with or supplement the list yourself.

PEEK'S PROGRESS (Collins. 10s. 6d.) is another study, this time far removed from murder. Mr. Neil Bell's hero, the humble, likeable and totally undistinguished Sidney Peek, is a country-town boy, brought up by a cobbler father holding what used to be known as "Socialist" views. The boy was normally intelligent, if not a little more, but failed in his attempt at a scholarship because of the uncouthness of his accent.

Even after the local bigwig and eccentric died and left Peek his impressive fortune, it was his accent as much as his gullibility (or innate decency) that confused and spoilt his life. I could not find him an admirable creature—a country town ought to produce something a little tougher than that—but I appreciated the sincerity of the story's telling, and Mr. Bell writes here, as always, with a profound inner conviction that defeats the cynics.

It is in itself a comment on the course of the war that, looking back over three years, books about the Royal Air Force and the Royal Navy predominate. Although it has been continuously in action and on many different fronts, the exploits of the British Army seem to have inspired nothing, in quantity, comparable with the other Services.

Nevertheless, I think it may be said that the books which have been written about Dunkirk, Greece, Crete, the Libyan, Eritrean and Abyssinian campaigns have been of a special quality. Unforgettable among these was *They Died With Their Boots Clean*, by Gerald Kersh, a Guardsman, who not only proved himself to be a writer of exceptional gifts, but one who could use them within the best traditions of the Brigade.

THE NINE LIVES OF BILL NELSON (Heinemann. 8s. 6d.) is also about a Guardsman. The Bill Nelson of the title, being reported killed, is reminiscently obituarised by about a dozen of his comrades. They all have stories to tell about him, and, in doing so, reveal the facets of their own widely-different characters. They all talk within the easy, terse and expressive slang of their kind, and they severally and collectively express a philosophy which finds no parallel in any other Corps in the British or any other Army, unless it be the United States Marines.

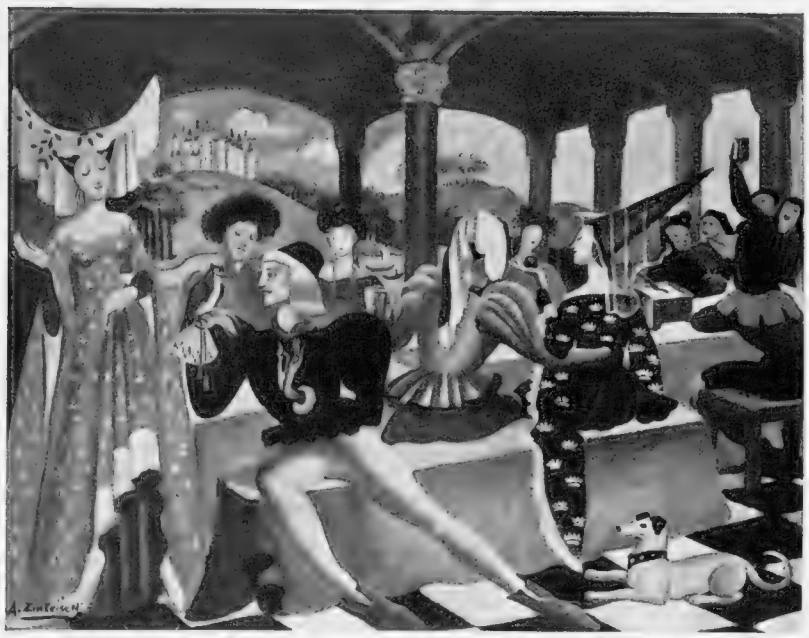
Mr. Gerald Kersh reproduces not only the speech and atmosphere of the barrack-room, but achieves a completely-convincing series of character-studies of a number of individuals, all, at the same time, bearing an unmistakable stamp. Technically, it is a difficult book to construct and to bring off with conviction. Not since Kipling has an English writer come nearer to the heart and soul of the British soldier.

JEAN: A MEMOIR OF LADY HAMILTON by Sir Ian Hamilton (Faber and Faber. 12s. 6d.), is a charmingly-produced book, compiled from letters grouped as "Tributes from three generations," a characteristic salute from Mr. Compton Mackenzie and an intimate memoir by the author. It may be a tribute to the author and to his subject that a reader who was not privileged to know Lady Hamilton (although he could scarcely have avoided some knowledge of her manifold activities) could have been so absorbed by this charming book as not miss a word of it.

THE CUP JOLLYER—The outside shape is formed by the plaster mould which fits into a rotating receiver, and the inside is formed by a metal profile. A ball of clay is placed at the bottom of the mould, and the jollyer roughly shapes this by hand, the article being finished by the profile

UTILITY POTTERY IN PRODUCTION: The new pottery is expected to be on the market in a very short while. The first consignments will go to relieve the shortage of crockery in canteens and British Restaurants in blitzed areas, but after this the housewife will have ample opportunity to replenish her stocks with the new standardised crockery. Other branches of the china industry will carry on their special production, such as Doulton, Spode, Minton, and Wedgwood—but only for export purposes. These two pictures, taken at the Wedgwood Pottery at Barlaston, show two of the processes through which the raw material passes before reaching British kitchens

POTTERY THAT HAS ONCE BEEN FIRED IS HARD, BUT POROUS: therefore it is immersed in a liquid glaze by the dipper. Being porous, any water is absorbed, leaving a thin film of glaze on the surface of the ware. This glaze must, however, be fired to produce the shining, glassy surface of pottery for domestic use. These samples of "utility" pottery will soon become available to the British housewife for her kitchen needs



ABOVE THE SALT

AT the household table of the middle ages the saltcellar was the symbol of class distinction. It separated the lord, his lady, their guests and privileged men, who sat "above the salt," from the menials and retainers who sat "below" it. The saltcellar has long since lost this symbolic meaning, but it remains a witness to the need of the human body for salt. Only a very small part of the salt consumed in food actually comes from the saltcellar. Much more reaches the table in butter, and bacon, or in other cured or preserved foods. But the total quantity of salt used for domestic purposes is trifling compared with the huge tonnages taken by Industry. Salt is one of the more important chemicals with which Nature has enriched the British Isles. It occurs in different parts of the United Kingdom in extensive beds formed by the drying up, in remote ages, of inland seas. The layer of salt in course of time became buried, and is known as rock salt. But only a little of the salt used today is obtained by mining this rock. By far the greater part is made by evaporating the brine which results when rock salt is dissolved either naturally by surface water which seeps through to the beds, or by water specially introduced through bore-holes. In some salt fields the natural brine rises to the surface and here salt has been made since the Roman occupation of Britain. Either as a mineral or as brine salt is the raw material for the manufacture of a wide range of important chemicals which are in their turn the raw material for many industries. Glass and soap-making, for example, use great quantities of alkali, which is made from brine and limestone. The dyestuffs, textile and paper-making industries could not be carried on without chemicals based on salt. Salt is used in the manufacture of non-ferrous metals and to some extent in agriculture. British salt is shipped overseas to form an extensive export trade. It is the responsibility of the British chemical industry not only to ensure that British salt beds are efficiently developed and used, but by constant research to improve upon ways of using salt to the benefit of Industry and the public.

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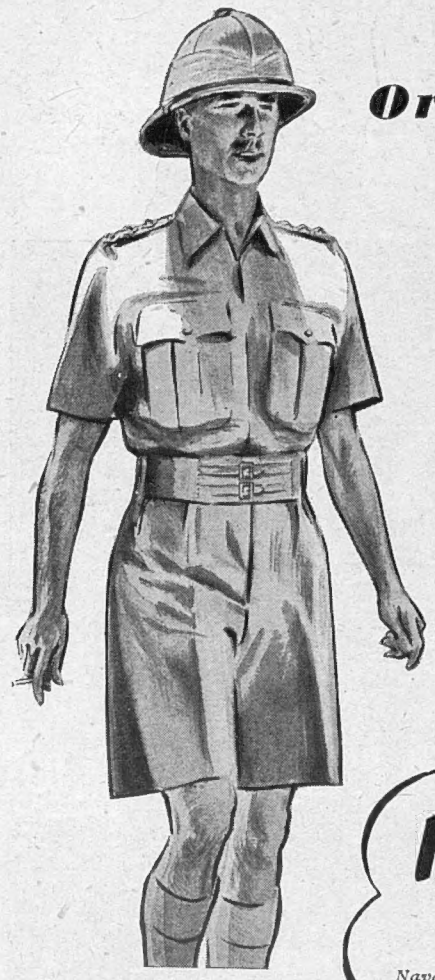

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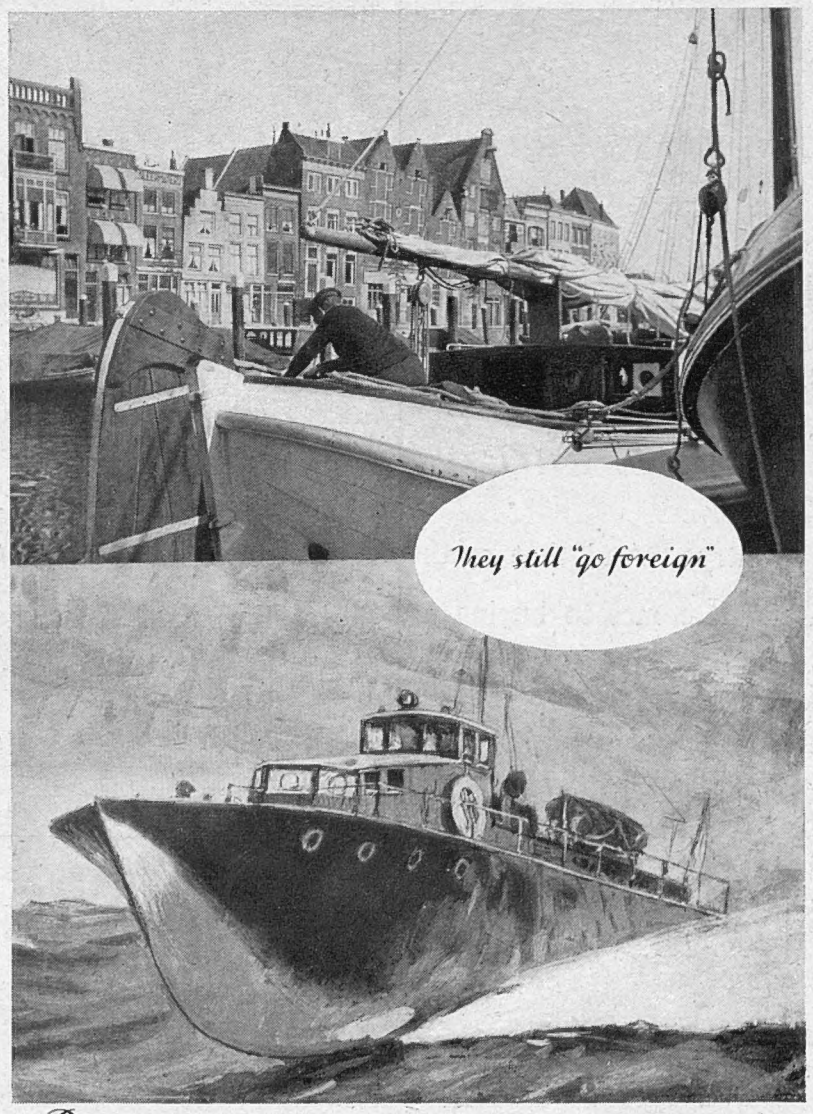

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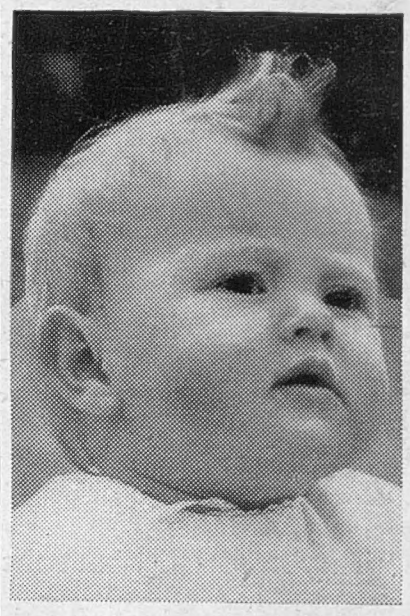

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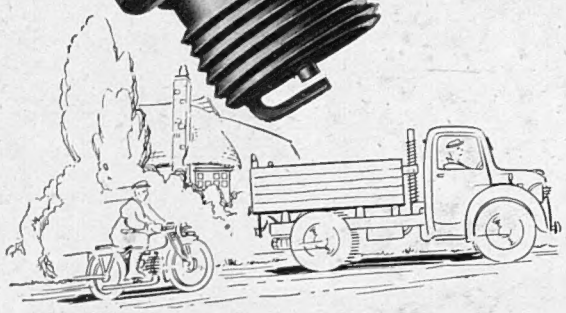

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